SCOTTY™

SCOTTY ProMin/Mil
User's Manual

Copyright © 2012 SCOTTY Group Austria GmbH. All rights reserved.

SCOTTY Group Austria GmbH. (SCOTTY) retains copyright in this manual and associated user documentation (the Documentation). SCOTTY and its suppliers retain all copyright and other intellectual property rights in the software embedded in and associated with the product described in the documentation (the Software). Some products include unmodified software distributed under GNU General Public License (GPL); please contact SCOTTY for further information and source code. No liability for consequential damages. All rights reserved.

By purchasing the product described in the documentation you are granted a limited license to use the Software, provided you do not copy, alter or adapt the Software in any way including decompiling, disassembling or reverse-engineering. The information provided in the Documentation is believed to be accurate and reliable, however, SCOTTY assumes no responsibility for its use, and reserves the right to revise the documentation without notice.

SCOTTY, the SCOTTY logo, SCS™, ProMin™, ProMil™, Mobile™, ProMax™, Z470™, Teleporter™, and Beamer™ are Trademarks of SCOTTY.
Microsoft® and Windows® are registered Trademarks of Microsoft Corporation.

Version 2.16.02
SD206955B

Table of Contents

1 Welcome 1

1.1 Welcome 1
1.2 Customer Support 2

2 Quick Guide 3

2.1 Quick Guide 3
2.2 Starting the SCOTTY Teleporter 3
2.3 The Main Window 4
2.4 Making a Call 4
2.5 Editing a Phone Book Entry 5
2.6 Creating a New Phone Book Entry 5
2.7 Receiving a Call 5
2.8 Terminating a Call 6
2.9 Recording a Video 6
2.10 Playing Back a Video 6
2.11 Transfer of Files with Automatic Hang Up 6
2.12 Transfer of Files during a Video Call 7
2.13 Opening a Data Conference 7
2.14 Making and Sending a Video Snapshot 8
2.15 Making a Video Snapshot 8
2.16 Controlling the Local Camera 8
2.17 Controlling the Far End Camera 9
2.18 Turning Off the System 9

3 System Interfaces 11

3.1 System Interfaces 11
3.2 Front Panel LEDs 11
3.3 Power supply 12
3.4 Power Button 12
3.5 Keyboard, Mouse and external storage devices 12
3.6 Video Inputs 13
3.7 Video Outputs 13
3.8 Audio Interfaces 14
3.9 The SCOTTY Z-Box 15
3.10 LAN Interface 15
3.11 ISDN Interfaces 16

4 System Configuration 17

4.1 System Configuration 17
4.2 The Configuration Utility 18
4.2.1 The "Setup" - Tab 18
4.2.2 The "Equipment" - Tab 19

All rights reserved.

4.2.3 The "LAN" – Tab 20
4.2.4 The "ISDN" - Tab 24
4.2.5 The "Shortcuts" – Tab 25
4.2.6 The "Remote Control" – Tab 26
4.2.7 The "Data Channels" – Tab 27
4.3 LAN Network Configuration 28
4.4 Setting the ISDN D-Channel Protocol 28
4.5 DVI/VGA Configuration 29
4.6 System Security 29
4.6.1 Write Changes to the Disc 30
4.6.2 Permanently Disable the Write Protection 31
4.6.3 Enable the Write Protection 31

5 Network Access 33

5.1 Network Access 33
5.2 LAN/WAN Connections 33
5.2.1 INMARSAT BGAN / Swift Broadband Modem 34
5.3 ISDN Connections 36
5.3.1 INMARSAT GAN / Swift64 Satellite Modem 36
5.3.2 BONDING Calls with a INMARSAT Modem 37
5.3.3 INMARSAT BGAN / Swift Broadband Modem 37
5.4 Synchronous Interface 38
5.4.1 INMARSAT-B Satellite Telephone 38
5.4.2 VSAT Satellite Connections 38
5.4.3 KIV7 / STE 38
5.5 Other Networks 38

6 Teleport Details 39

6.1 Teleport Details 39
6.2 The Main Window 40
6.2.1 The Standard Toolbar 40
6.2.2 Camera Control, Controlling the Camera 42
6.2.3 Audio, Controlling the Audio System 42
6.3 The File Menu 43
6.3.1 Dial, Making a Call 43
6.3.2 Creating or Modifying a Telephone Book Entry 45
6.3.3 Format for Entering the Telephone Number 46
6.3.4 Disconnect, Terminating a Call 47
6.3.5 Recorder, the Record and Play Mode 48
6.3.6 File Transfer, Transfer Files Efficiently 50
6.3.7 Share, Starting the Data Package 53
6.3.8 T.120 Netmeeting 53
6.3.9 H.239 Dual Video Stream 55
6.3.10 Snap & Send 55
6.3.11 Snapshot, Taking a Still Picture 56
6.3.12 Far End Cam Ctrl, Controlling a Far End Camera 56
6.3.13 Exit, Ending the Program 56
6.4 The View Menu 57
6.4.1 Video Window, Manipulating the Video Window 57
6.4.2 Camera Control, Activating the Camera Toolbar 58
6.4.3 Local Camera Control, Controlling the Local Camera 58
6.4.4 Far End Camera Ctrl, Controlling the Far End Camera 60
6.4.5 Tone Pad, Playing DTMF Tones 62

 All rights reserved.

6.4.6 Audio & Video Controls 63
6.4.7 Video Switch Matrix 64
6.4.8 Pic In Pic, Setting the Picture in Picture view 65
6.4.9 Toolbars, Manipulating the Toolbars 65
6.4.10 Received Files, Listing the Received Files 65
6.4.11 Recorded Files, View recorded Files 66
6.4.12 Connection Info, Displaying the Connection Status 66
6.5 The Options Menu 68
6.5.1 Dialing, Setting the Dialing Parameters 68
6.5.2 Audio, Setting the Audio Levels 70
6.5.3 Video, Setting the Video Parameters 72
6.5.4 Data, Adjusting the Data Channel Parameters 73
6.5.5 Directories, Setting the SCOTTY Directory Structure 75
6.5.6 Preferences, Setting the System Parameters 76
6.5.7 File Exchange Server (optional) 77
6.5.8 File Exchange Server, Setup and Operation 78
6.5.9 Save, Saving the Current Settings 81
6.5.10 Factory Defaults, Restoring the Factory Defaults 82
6.6 The Help Menu 82
6.6.1 Help Topics, the SCOTTY Help System 82
6.6.2 Context Help, the Topical Help 82
6.6.3 About Teleporter, Displaying the SCOTTY Configuration 83
6.7 Shortcuts 84

7 System Recover 87

7.1 Restoring the System 88
7.2 Restoring the System using Recovery Media 90
7.3 Creation of a User defined Hard Disk Image 92
7.4 Creation of New Recovery Media 93
7.5 Full System Backups 94

8 Maintenance 97

8.1 Maintenance 97
8.2 Internal Battery Replacement 97
8.3 Fan filter pad replacement 97

9 Appendix 99

9.1 Application Notes 99

All rights reserved.

1 Welcome

1.1 Welcome

Welcome to the world of advanced communication... welcome to the world of SCOTTY!

This manual has been designed to help you take full advantage of your SCOTTY solution. It is not only a comprehensive guide to the operation of the system, it also provides technical details, simple step by step instructions on how to perform the most common applications, and more. We recommend you read this manual carefully in order to fully benefit from SCOTTY's advanced solutions.

SCOTTY provides a unique offering of live audio, video, and data communication, live video surveillance transmission, and HD quality imagery transfer from air, land, and sea – over satellite and terrestrial networks. This package is used by customers around the world to support their border control, intelligence gathering, reconnaissance, surveillance, search and rescue, and other missions which require beyond line-of-sight connectivity and ruggedized/reliable equipment.

SCOTTY is EN9100:2009 certified and has over fifteen years' experience serving government customers around the world.

Please find detailed information on our website: **www.scottygroup.com**

All rights reserved.

1.2 Customer Support

The **Support** section on our website **www.scottygroup.com** offers help to maximize the functionality of your SCOTTY system.

Choose Downloads to retrieve the latest documents, manuals and software.

Go to the section Demo Numbers to find the updated phone and IP information to place demonstration and test calls to our demonstration systems.

Find useful hints and background information under Troubleshooting and Communication Networks.

Choose Contact Support Team to find out how to get into contact with our support experts.

Finally, if you need urgent help for your SCOTTY solution, call the direct customer support number:

Europe, Middle East, Africa, Asia	Austria (UTC +1): +43 664 454 2827
The Americas, Asia	Atlanta, USA (UTC -6): +1 770 380 7186

Please help our support team in providing superb support by including the serial number of your SCOTTY unit or license in all requests.

All rights reserved.

2 Quick Guide

2.1 Quick Guide

In the following section we want to make the user familiar with the basic functions of the SCOTTY Teleporter software. Making a professional videoconference, using the quick file transfer feature, recording and playing back videos and additional features of the Teleporter are described step by step to be carried out very easily.

For further details, see the following chapters.

2.2 Starting the SCOTTY Teleporter

Step 1: Switch on the unit, Windows loads itself automatically.

Step 2: When Windows is ready, choose the appropriate Teleporter icon on the desktop.

The SCOTTY Teleport application can be configured for auto start operation. Step 2 is not necessary in such a setup.

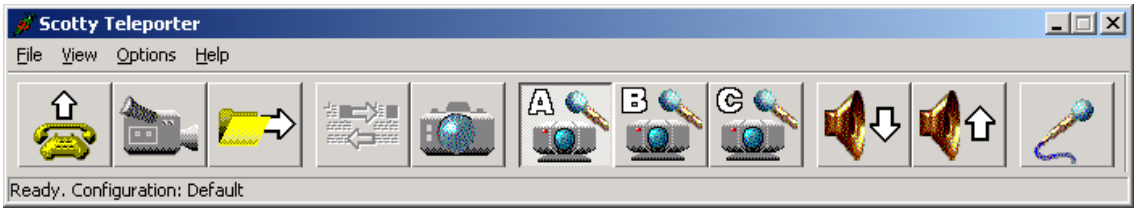
The desktop shows one SCOTTY Teleporter icon for each configured communication network. By double-clicking the appropriate Teleporter icon, the software starts and configures the system for the chosen network. By clicking the "Teleport" icon the system gets configured for standard operation (ISDN and LAN).

Because the SCOTTY Unit's communication interfaces are already pre-configured, it is very easy for the user to alternate between different available networks. Just a simple click on the appropriate icon and all parameters necessary for operation are loaded. Even the system's "Telephone Book" containing the telephone numbers of remote stations can remain unchanged when, for example, the unit is switched between ISDN and INMARSAT.

All rights reserved.

2.3 The Main Window

After double-clicking on the SCOTTY Teleporter icon, it takes a few moments for the system to initialize. The running initialization steps are displayed in the status bar at the bottom of the Main Window. Video-communication is ready to begin once this process is complete.



The SCOTTY Teleporter Main Window

SCOTTY video-communication is as easy as placing a telephone call. The most often used functions are accessible by tool buttons. These and all other functions are also available using the menu bar.

2.4 Making a Call

Step 1: From the standard toolbar of the SCOTTY main window select the **Dial** button.

Step 2: Select the entry of the desired party.

Alternatively you can directly enter the phone number or IP address into the **Number** edit field. If you do not want to use the keyboard, clicking at the button **Pad** opens a dial pad which can be used to enter the number with the input device

Step 3: Press **Dial** to start the call using the default dialing parameter.

Press **Low Cost** to start the call with reduced bandwidth.

Press **Voice Only** to call a normal telephone.

All rights reserved.

2.5 Editing a Phone Book Entry

Step 1: From the standard toolbar of the SCOTTY main window select the **Dial** button.

Step 2 Click the **Edit Entry** button to edit the selected phone book entry.

In order that the ISDN telephone number is valid regardless of the systems present location and the available network type, the telephone numbers should have the following format: +<country code><area code><number>, e.g.+43 316 407849.

There are several ways to address a LAN videoconferencing partner: IP-address (e.g. 91.209.75.198), hostname (e.g. demograz.scottygroup.com), or using a gatekeeper.

See chapter Format for Entering the Telephone Number for details.

2.6 Creating a New Phone Book Entry

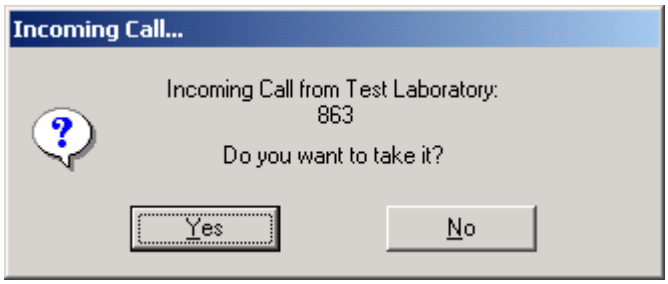
Step 1: From the standard toolbar of the SCOTTY main window select the **Dial** button.

Step 3: Click **New Entry**.

Step 4: Enter name and number and press **OK**.

2.7 Receiving a Call

An incoming call is announced by the **Incoming Call** dialog box of the opened SCOTTY Teleporter.



The Incoming Call dialog box

Step 1: Click **Yes** to accept the call.

If no action is taken, the system reacts according to the Teleport pick-up settings. If automatic pickup is activated under preferences, the call is put through after a moment's pause.

All rights reserved.

2.8 Terminating a Call

Step 1: The ongoing videoconference can be terminated by clicking the **Dial** button.

2.9 Recording a Video

Step 1: From the standard toolbar of the SCOTTY main window select the **Recorder** button (optional).

Step 2: Start the recording.

Step 3: Stop recording. The recording is saved with an automatically assigned name.

Step 4: The name of the saved recording is now displayed in the field **File** of the section "Play" and can be played back with the **Play** button if desired.

2.10 Playing Back a Video

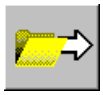
Step 1: From the standard toolbar of the SCOTTY main window select the **Recorder** button (optional).

Step 2: In the section "Play" choose the **Browse** button, select one of the recorded files on the hard drive and choose **Open**. To play back a previously received file, browse to the `Incoming` directory.

Step 3: Press the **Play** button.

2.11 Transfer of Files with Automatic Hang Up

Step 1: From the standard toolbar of the SCOTTY main window select the **File Transfer** button.



Step 2: Click on **Add**.

Step 3: In the "Open" dialog select the file to transmit and press **Open**.

Step 4: Repeat Step 2 and Step 3 to add several files to the displayed list.

Step 5: Click on **Send**.

Step 6: Double-click the desired party.

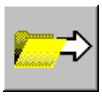
The SCOTTY File Transfer is possible between two SCOTTY systems using Teleporter or the File Transfer software.

All rights reserved.

2.12 Transfer of Files during a Video Call

Step 1: Establish a videoconference.

Step 2: After connection has been established, select the **File Transfer** button.



Step 3: Click on **Add**.

Step 4: In the "Open" dialog select the file to transmit and press **Open**.

Step 5: Repeat Step 3 and Step 4 to add several files to the list.

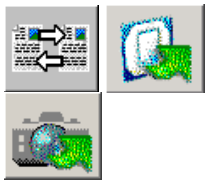
Step 6: Click on **Send**.

The SCOTTY File Transfer is possible between two SCOTTY systems using Teleporter or the File Transfer software.

2.13 Opening a Data Conference

Step 1: Establish a videoconference.

Step 2: After connection has been established, select the **Share** button. Teleworking is ready to begin. Depending on the configuration of the local and remote system, the button automatically activates either H.239 Dual Video (optional), T.120 Netmeeting or activates Snap & Send.



Step 3: When using T.120 Netmeeting, share applications with "Share", "Collaborate" or use the Whiteboard. When using H.239 Dual Video (optional), the content of the Windows Desktop is transmitted to the remote station.

Step 4: To close the Data Package, press:

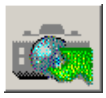
The optional H.239 Dual Video is closed by pressing the **Share** button again.

All rights reserved.

2.14 Making and Sending a Video Snapshot

Step 1: Select a camera view.

Step 2: Click on the **Snap&Send** button. The still is now saved to the `Records` folder and is automatically transferred to the remote side.



Step 3: If not already in a call and **Auto Dial** is not activated, enter desired number in the upcoming Phonebook and click Dial.

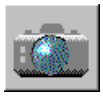
Step 4: The snapshot is automatically displayed on the receiving side if **Auto Show incoming Images** is activated.

The SCOTTY Snap&Send transfer is possible between two SCOTTY systems using Teleporter or the File Transfer software.

2.15 Making a Video Snapshot

Step 1: Select a camera view.

Step 2: Click on the **Snapshot** button. The still is now copied into the clipboard and is stored as a JPG image to the `Records` folder.



2.16 Controlling the Local Camera

Step 1: Activate the camera toolbar with **View | Camera Control**.

Step 2: Be sure that the **Local/Far end camera** button on the camera toolbar is not selected.

Step 3: Control the camera with the available functions on the camera toolbar.

Step 4: Click the **Next** button to use further controls in the toolbar.

All rights reserved.

2.17 Controlling the Far End Camera

Step 1: Establish a videoconference.

Step 2: Select **File | Far End Cam Ctrl** to activate far end camera control. The camera toolbar appears and displays all far end cameras.

Step 3: Control the far end camera with the available functions on the camera toolbar.

Step 4: Click the **Next** button to use other controls in the toolbar.

2.18 Turning Off the System

Step 1: Close the SCOTTY Teleporter main window with ☒ and confirm the appropriate message.

Step 2: Click on **Start** (usually lower left corner).

Step 3: Click on **Turn Off Computer**.

Step 4: Select the option **Turn Off.**

If the system is not shut down in the correct fashion, data-loss can occur.

Congratulations! You have now mastered the main functions of the SCOTTY Teleporter successfully.

All rights reserved.

3 System Interfaces

3.1 System Interfaces

A detailed description of the mechanical, electrical and environmental specifications can be obtained from the following documents:

SCOTTY ProMin: **ProMin Equipment Specification**, Document SD6021009

SCOTTY ProMil: **ProMil Equipment Specification**, Document SD6021010

All connections are available at the rear side of the system. Depending on the wiring of the system's integration, some of the interfaces described in this chapter might not be available.

The system's software is already pre-defined as described in the following chapters. Anyhow, the software might need to be configured accordingly after system setup. See chapters System Configuration, Network Access and Teleport Details for details.

3.2 Front Panel LEDs

The system features two LEDs on the front panel:

- ACT Disc or network activity
- Pwr Power LED, see below

The current state of the system is communicated via the Power LED:

- Off Switched off or no power applied
- On System is operational
- Flashing slowly System is shutting down
- Flashing quickly Clearing memory (security option)
- Two short flashes Heating up or temperature too high

When powering up, the system performs a power-up self test including fan test for three seconds. During this time both LEDs should be steady on.

All rights reserved.

3.3 Power supply

The system is powered via the **PWR**-Connector with DC power.

To run the system with AC power an external power adapter is needed. If the external power supply is equipped with a power button, switch on this button to power the system

3.4 Power Button

There are two buttons at the front panel of the system

- PWR Power button
- CTL Control switch (lockable), runs the self-test procedure.

  Optional: Button must be pressed together with the power button to switch the system on and off. Because the CTL button is located behind the lockable front lid, the system can protected against unauthorized power cycles.

Depending on the application, SCOTTY can configure the system to immediately start when power is applied. This eliminates the need to use a power button.

Press the power button for one second to switch on the system when it is off.

The System can be powered down either with a shutdown initiated from the Windows menu, or by pushing the power button. Pressing the button for one second will gracefully shutdown Windows.

Holding the power button for at least five seconds will immediately switch off the system without shutting down Windows first.

3.5 Keyboard, Mouse and external storage devices

Four USB ports (**USB 1** to **USB 4**) are available for the connection of a keyboard, a mouse, storage devices and other USB devices. A further USB port is available behind the front lid, which can be locked if the used USB device is small enough.

If the devices are Windows compatible, they will be auto-detected by the system.

Systems featuring the security option prevent writing to the internal hard disc. To use all features of such a system, it is necessary to connect an external storage device.

All rights reserved.

3.6 Video Inputs

The system features up to four composite video inputs: **Camera 1**, **Camera 2**, **Video In 3** and **Video In 4**. The inputs can be used for connection of FLIR cameras, room cameras, systems featuring a composite or S-Video output, or other video equipment.

Optionally a **HD-SDI** Input is available, which can be configured as **Camera 1** or **Camera 2** input.

Pan-Tilt-Zoom cameras can be controlled by the Teleport software using one of the RS-232 ports of the system. Two additional RS-232 ports are available for the steering of **Camera 1** and **Camera 2** (**Cam1** and **Cam2**).

Configuration of the video inputs and the connected video sources can be done with the **SCOTTY Configuration Utility**.

In the Teleport application preset A (**Cam 1**) is pre-programmed for **Camera 1**; preset B (**Cam 2**) for **Camera 2**. , preset C (**Input 3**) for **Video In 3**. The **Audio & Video Controls** can be used for further control of the video inputs.

3.7 Video Outputs

A video display can be connected via the **DVI/VGA** interface.

A DVI monitor can be directly plugged into the interface. By using a VGA adapter, a VGA monitor can be connected. It is even possible to connect a VGA and a DVI monitor simultaneously using a SCOTTY adapter cable.

Monitor and resolution are usually automatically detected by Windows. Please refer to chapter System Configuration for further information about the configuration of the DVI/VGA interface.

The Teleport application displays the received or local video inside a video window, scalable up to full screen. The **Audio & Video Controls** can be used to control the signal shown in the video window.

All rights reserved.

Two analog video outputs are available: **Video Out** for composite video and **Video S-Out** for S-Video. S-Video always shows the received video signal, while the source for composite-video can be configured in the Teleport application in the **Audio & Video Controls** dialog, regardless which signal is displayed at the DVI/VGA monitor. For special integrations the Video Out is available twice at the equipment connector.

Connecting a TV or video beamer to the video output makes dual monitor operation possible: The monitor can be used to monitor the transmitted video, while the TV or video beamer is used to show the received video to the audience.

3.8 Audio Interfaces

The system utilizes versatile audio interfaces, which can be configured in the Audio Configuration dialog.

The Teleport application provides a professional audio mixer, which allows individual mixing of up to 8 microphones or other audio sources. Audio level indicators and an integrated test mode allow easy configuration and control.

The following audio interfaces are available:

Mic 1, **Mic 2** and **Mic 3**: For external microphones.

Line In: For a mono- or stereo microphone signal using line level.

Cam1 and **Cam2**: For cameras with integrated microphones.

A Headset can be connected to the **Headset** jack.

Speaker: To connect active loudspeakers.

Line Out: Output signal using line level.

The audio signal of an external audio source can be connected to **Aux In**. This audio signal is transmitted to the remote side during a video conference as well as played back at the local side.

Aux Out can be used to record the audio signal of a video conference. The audio signal contains not just the remote audio, but also the local audio which will be transmitted to the remote side.

The configuration of the audio interfaces can be done in the Teleport software using the **Audio Configuration Dialog**. Preset **Default** is pre-programmed for microphone and loudspeaker, **Headset** for using a headset and **VCR** for external sources.

All rights reserved.

3.9 The SCOTTY Z-Box

For stand-alone systems the "SCOTTY Z-Box" can be connected to the systems **Equipment** connector to get easy and comfortable access to all analog audio and video interfaces. For special integrations, the signals can be used directly from the equipment connector, without the need of a Z-Box.

For **Camera 1** and **Camera 2** there are two connectors available at the Z-Box: A S-Video input and a high-density input. A camera signal can be connected to the S-Video input either directly or via a composite adapter. The high-density input can be used together with an adapter cable for special types of cameras. It provides video, audio and microphone, power and a serial RS-232 port for camera control on a single cable.

*The video signal for **Camera 1** or **Camera 2** is shared on the S-Video and high-density connector. Do not use both connectors simultaneously.*

The camera adapter cable can be extended using a high-quality VGA cable.

Two XLR style microphones can be connected to the connectors **Mic 1** and **Mic 2** on the back side of the Audio and Video Breakout Box. These inputs provide a +24V phantom power.

Another microphone can be connected with a 3.5mm TRS jack to input **Mic 3**. To use a headset a further 3.5mm TRS socket **Headset** is available. Both interfaces use tip as signal input with +2.25V phantom power on it.

3.10 LAN Interface

The **LAN** interface is a standard Ethernet interface, allowing network access and video and data calls. The LAN interface can be used e.g. to connect the system to a local intranet, the Internet or a Swift Broadband modem.

On default, the SCOTTY system uses DHCP and will setup the network address automatically.

All rights reserved.

3.11 ISDN Interfaces

Four ISDN interfaces (**ISDN 1** to **ISDN 4**) are available, allowing voice, video and data calls up to 512 kbit/s.

The ISDN interfaces have to be used in ascending order, beginning with **ISDN 1**. Each ISDN interface features two channels with 64 kbit/s each.

The system is configured to Euro-ISDN on default.

All rights reserved.

4 System Configuration

4.1 System Configuration

The system's software is already pre-defined for easy operation. Anyhow, after initial system setup or when the setup is changed, the software might need to be re-configured.

This chapter describes the configuration of the Teleport application using the Configuration Utility, and global Windows settings needed for Teleport operation. Please refer to Microsoft literature for the configuration of other Windows settings.

If you want to change the current system configuration, administrator rights are needed.

Further settings can be configured inside the Teleport application, for more information see chapter Teleport Details.

On systems featuring a change-protected system partition, configuration changes must be saved permanently to the hard disc, see chapter System Security.

Systems featuring the security option utilize a write-protected internal hard disc. Configuration changes are only possible by SCOTTY.

All settings will be restored to factory defaults by a system recovery. Therefore, it can be advisable to create a new recovery image after changing the system configuration. See chapter System Recover for details.

All rights reserved.

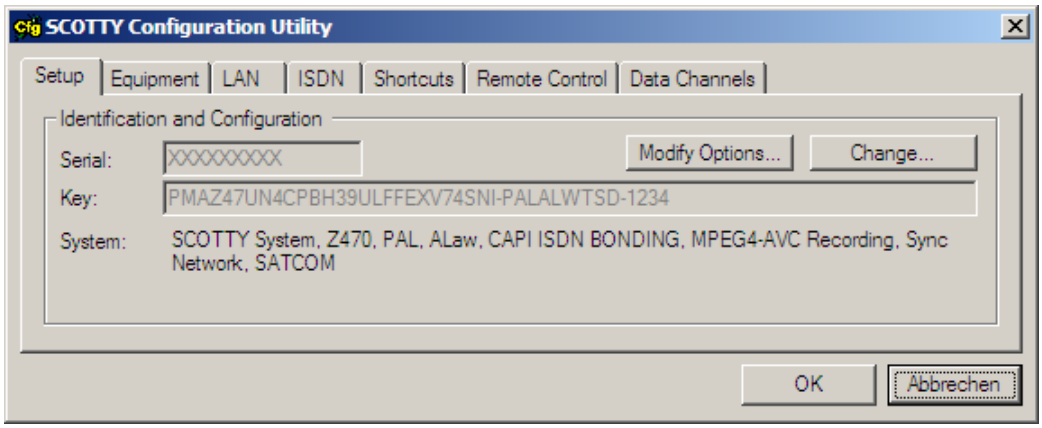
4.2 The Configuration Utility

The SCOTTY Configuration Utility enables the user to define system settings. By choosing **Start | Programs | SCOTTY | Config,** the **SCOTTY Configuration Utility** window is opened.

When pressing OK the settings are saved and will take effect on the Teleporter software next time it is started.

4.2.1 The "Setup" - Tab

The **Setup** tab displays the configuration of the installed system. The configuration of the system can only be changed when a new key is provided by SCOTTY. By pressing the **Change…** button the new key can be entered. Pressing the **Modify Options** button opens a dialog which provides, after consultation of SCOTTY, an easy way to change the system configuration without editing the key manually. Free key-tokens can be added or removed manually in this way. The **Add** button is used to add, the **Remove** button to delete and the **Modify** button to change entries.

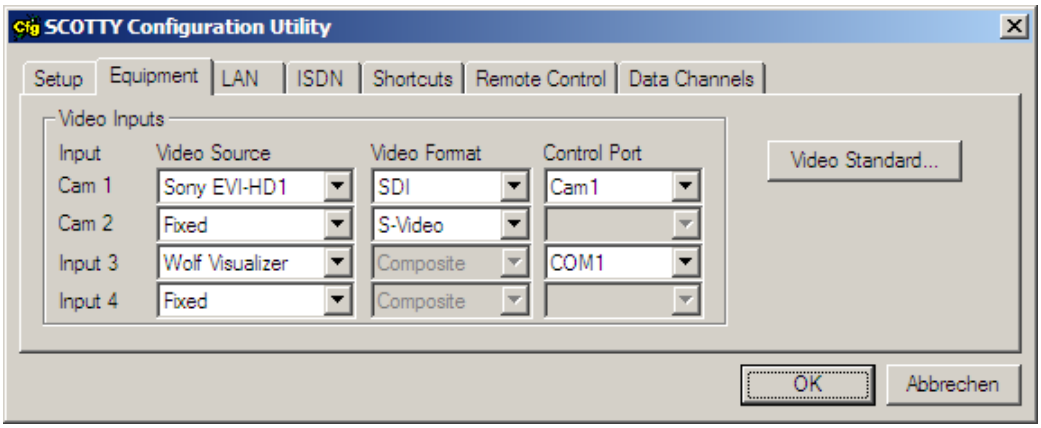


The Configuration Utility dialog box, the folder Setup

All rights reserved.

4.2.2 The "Equipment" - Tab

In the folder **Equipment**, video source settings can be made.



The Configuration Utility dialog box, the folder Equipment

In **Video Inputs** the video equipment connected to the video inputs **Camera 1**, **Camera 2**, **Video In 3** and **Video In 4** can be configured.

The field **Video Source** selects the type of the equipment connected. "Fixed" specifies a fixed camera or another non-controllable video source. The setting "VCR" should be used if connected to a VCR.

Under **Video Format** allows the selection between the video formats supported by the system. Choosing “SDI” (optional) uses the digital HD-SDI input for the selected video and audio source.

If a controllable camera is set in **Video Source**, the connection of the serial cable for camera control can be selected in **Control Port**. For all video inputs the "Com" ports of the system are available. If available on the hardware of the SCOTTY system, additional choices of control ports on the corresponding camera connectors are selectable. Some camera types support chaining to connect two cameras to a single control port; select "Pos2" for the camera linked to the camera on the control port.

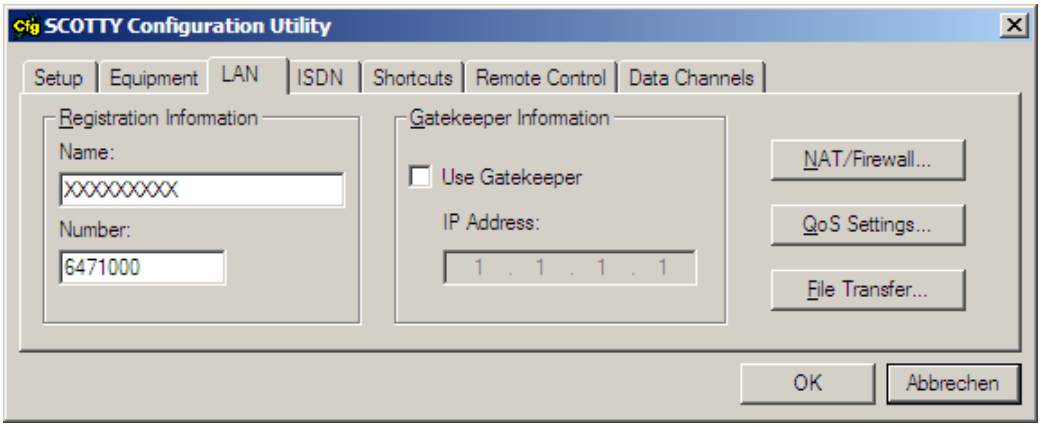
*To configure a controllable camera just select the camera type in the field **Video Source**; **Video Format** and **Control Port** get automatically preset.*

Pressing **Video Standard...** allows the user to change the video standard of the video inputs and outputs between "PAL" and "NTSC". Caution: The selected video standard must match the connected equipment.

All rights reserved.

4.2.3 The "LAN" – Tab

The **LAN** folder allows the configuration of H.323 Settings.



The Configuration Utility dialog box, the folder LAN

A gatekeeper is a central unit that allows dialing into videoconference systems on a network by a unique name or number, regardless of their current IP address.

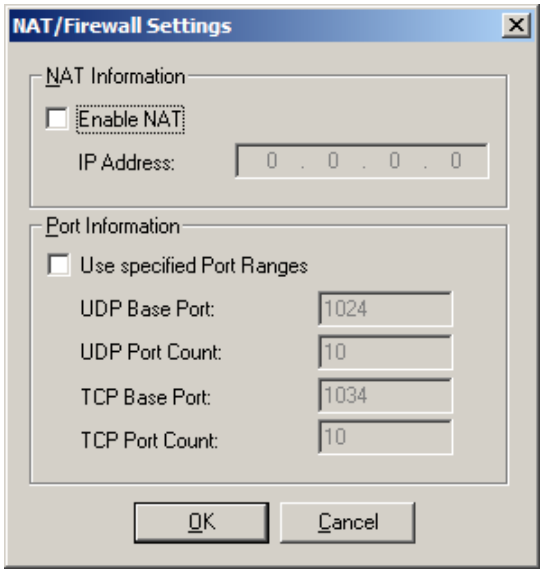
In order to use the gatekeeper for making H.323 calls select **Use Gatekeeper** and enter the **IP Address** of the gatekeeper.

Registration information contains the system name that can be entered in the **Name** field and the E.164 address which is equivalent to a telephone number; this number can be entered in the **Number** field. This information is used to register the system with the gatekeeper.

For settings of the LAN interface see chapter LAN Network Configuration.

All rights reserved.

Pressing the **NAT/Firewall** button allows advanced configuration, e.g. for tunneling through a Firewall, or making calls through a router.



LAN configuration tab, LAN/Firewall configuration

NAT, Network Address Translation, is often used when a videoconferencing system is connected to a router or firewall. The NAT support of the videoconferencing system enables connections through firewalls and routers that do not feature H.323 support. NAT support is enabled by selecting **Enable NAT** and entering the global or external IP-address of the router into the **IP Address** field.

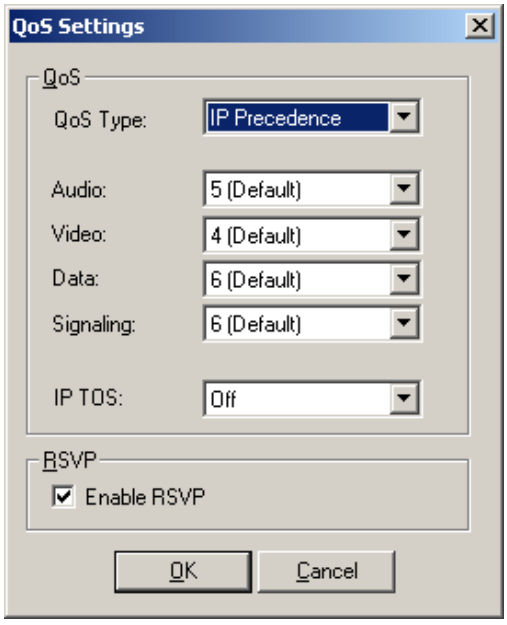
The system will dynamically allocate which ports to use for TCP and UDP connections. To limit the outgoing and incoming ports used to a specific range activate **Use specified Port Ranges** and enter both starting port number in the **UDP Base Port / TCP Base Port** fields and the number of following ports in the **UDP Port Count / TCP Port Count** fields.

*For reliable videoconferencing between networks, the **Port Count** number should be 10 or higher.*

*To tunnel through a Firewall that is not supporting H.323, activate **Enable NAT** and **Use specified Port Ranges**. The specified ports must then be opened to allow traffic through the Firewall (also known as port forwarding). Additionally, following ports are used by the system and should be opened as well: **1718**, **1719**, **1720** and **1503**.*

All rights reserved.

Pressing the **QoS Settings** button allows the configuration of IP quality of service.



LAN configuration tab, QoS configuration

Quality of Service refers to control mechanisms that can provide different priority to different users or data flows. This is important if the network capacity is limited.

The service type can be selected from the **QoS Type** field.

The Type of service TOS value itself can then be set in the fields **Audio**, **Video**, **Data** and **Signaling** for different data streams.

Audio *refers to Audio RTP stream,* ***Video*** *to Video RTP stream,* ***Data*** *to far end camera control FECC stream, and* ***Signaling*** *to RTCP streams and packets used by H.225 and H.245 protocols.*

Selecting **IP Precedence** as service type will provide an additional parameter, the **IP TOS**. This parameter helps the router to select a routing path when multiple paths are available.

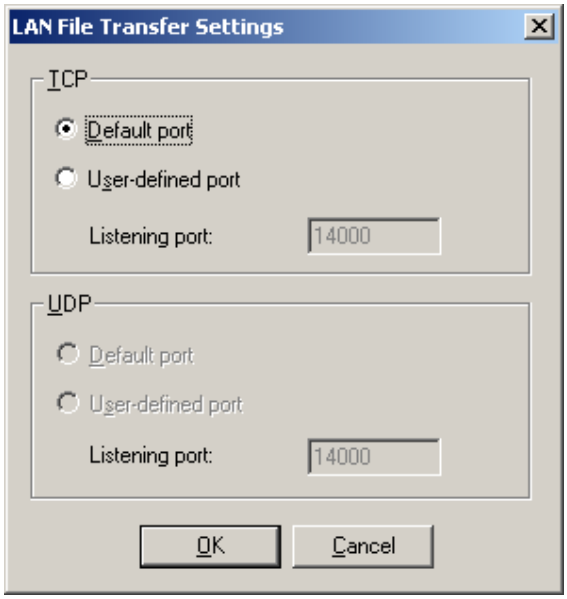
Resource Reservation Protocol (RSVP) enables the endpoints to request the optimal amount of bandwidth during an IP video conference. RSVP is controlled by the button **Enable RSVP**.

All rights reserved.

Pressing the **File Transfer ...** button allows the configuration of the TCP and UDP ports used for File Transfer.

The SCOTTY Teleporter uses TCP for a file transfer using the LAN interface. For high-performance file transfer e.g. over satellite links, a high speed UDP based transfer is available.

By default, the **Default port** (14000) is used both for incoming and outgoing transfers. Selecting **User-defined port**, a different port value can be entered into the **Listening Port** field.



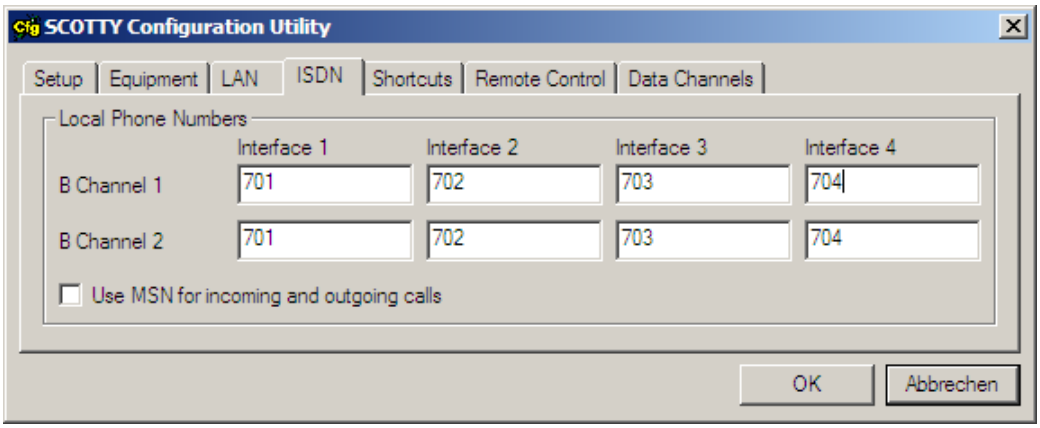
LAN configuration tab, LAN File transfer configuration

For file transfer during a video call, both parties need to be configured to the same TCP respectively UDP port settings.

All rights reserved.

4.2.4 The "ISDN" - Tab

The **ISDN** folder allows configuring the ISDN interfaces of the internal IMUX ISDN card.



The Configuration Utility dialog box, the folder ISDN Interface

For each of the 4 interfaces the local phone number of the 1st and 2nd B Channel can be configured separately, the number entered for **B Channel 1** will be automatically suggested as value for **B Channel 2** though.

A wrong configuration of the phone numbers on the Inverse Multiplexer still allows 1B and 2B calls, but will fail for incoming BONDING calls.

It is only needed to specify the different extensions of the ISDN lines, not the complete phone numbers. All extensions must have the same length.

Likewise, in this folder settings for MSN (Multiple Subscriber Number) can be made. MSN are usually used if more than one ISDN devices share a single ISDN line. By selecting the checkbox **Use MSN for incoming and outgoing calls** and entering the Number(s) into the fields **B Channel 1** and **B Channel 2** of **Interface 1**, the system becomes configured to this MSN number(s). Incoming calls with other MSN numbers will be ignored, outgoing calls use this MSN. If the system should be reached within more than one MSN number, multiple numbers can be entered separated by commas. When making calls, the first MSN number from field **B Channel 1** is used for the first line and the first number from field **B Channel 2** for the second line if entered.

If MSN is used, the system is only reachable through number(s) with the last digits matching the provided MSN numbers.

*Active MSNs are shown under **Help |About Teleporter**.*

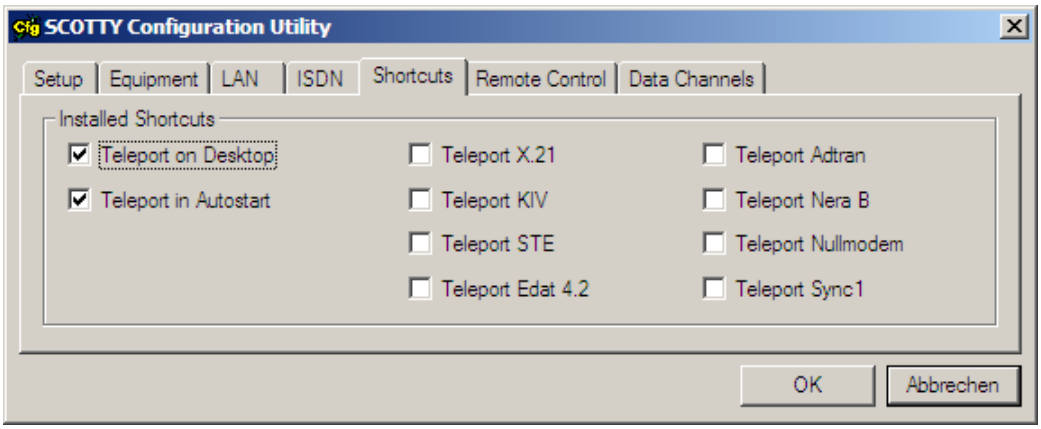
The D - channel protocol of the ISDN interfaces are system wide settings, see chapter Setting the ISDN D-Channel Protocol for details.

All rights reserved.

On systems where only a single ISDN interface is available, the ISDN tab is reduced to a single ISDN number field. The configuration of MSNs is similar to the previous description, but only 1B and 2B calls are possible; BONDING connections are not supported.

4.2.5 The "Shortcuts" – Tab

With the **Shortcuts** tab, the Teleport shortcuts in the Start Menu and on the Desktop can be enabled or disabled.



The Configuration Utility dialog box, the folder Shortcuts

Activating the **Teleport on Desktop** option puts a Teleport shortcut at the desktop; enabling **Teleport in Autostart** automatically starts Teleport at login.

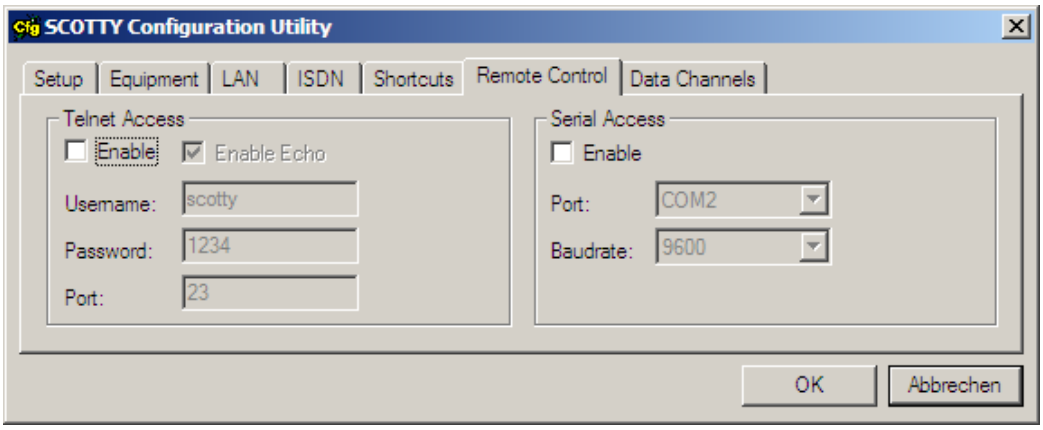
If supported by the hardware of the SCOTTY system, additional shortcuts for special communication or encryption devices are displayed. Activating a shortcut option will place the corresponding Teleport shortcut on the desktop.

All configured shortcuts can also be found on the Windows Start Menu under **Start | Programs | SCOTTY**.

All rights reserved.

4.2.6 The "Remote Control" – Tab

With the SCOTTY Remote Control functionality it is possible to remotely control the SCOTTY Teleport, for example by a Touch panel Media Control.



The Configuration Utility dialog box, the folder Remote Control

To control the SCOTTY Teleport via LAN, click on **Enable** in the **Telnet Access** field. Define a **Username** and **Password** to prevent unauthorized access. Activate **Enable Echo** if the characters entered at the remote site shall be echoed by the SCOTTY system.

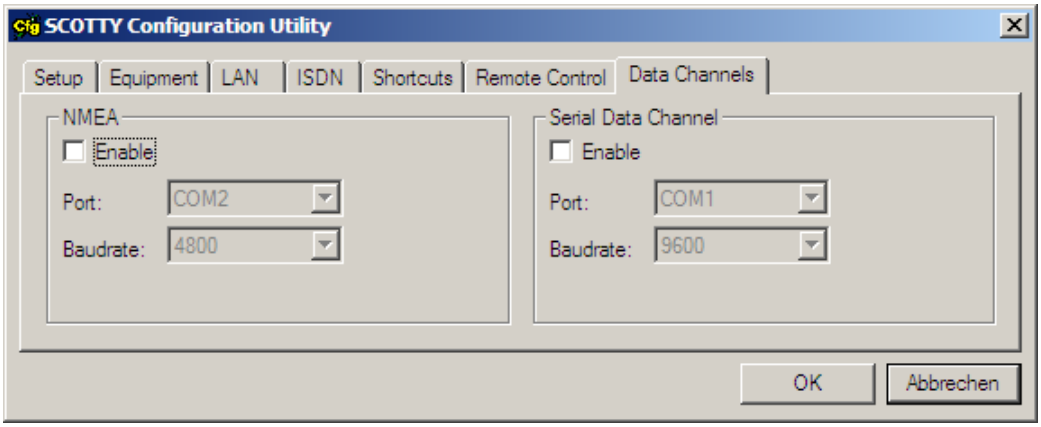
Clicking on **Enable** in the **Serial Access** field allows controlling SCOTTY Teleport using a serial RS232 interface. The control device has to be connected to the chosen **Port** using the selected **Baudrate**.

Please contact your SCOTTY representative for additional information about the SCOTTY Remote Control functionality.

All rights reserved.

4.2.7 The "Data Channels" – Tab

The **Data Channels** tab allows configuring external data channels.



The Configuration Utility dialog box, the folder Data Channels

The position information supplied by an external NMEA source, like a GPS unit, can be used to tag snapshot made by the Teleport application. Choosing **Enable** in the **NMEA** field will configure the Teleport application to use the selected serial RS232 port as information source.

The system will decode the latitude, longitude, altitude, date and time from NMEA $GPRMC and $GPGGA sequences.

*The current status of the received position information can be viewed in the Teleport application under **Help | About Teleporter**.*

Choosing **Enable** in the **Serial Data Channel** field will make the SCOTTY Teleport software transmit the data stream of the selected serial RS232 interface in parallel to the video conference if this is supported by the other endpoint.

It is possible to choose the same COM port for both NMEA and Serial Data Channel, assumed that both are configured to the same Baud rate. This way, the position information from an external GPS can be used both to tag local snapshots and to track the system on the remote side.

All rights reserved.

4.3 LAN Network Configuration

The internet protocol settings of the system must be configured according to the requirements of the local network access.

To change the current IP settings, follow the following steps:

- **Start | Control Panel**
- Open **Network Connections** in the category **Network and Internet Connections**,
- Select **Local Area Connection** with the right mouse button and select **Properties**
- Select **Internet Protocol (TCP/IP)** and click on **Properties**
- IP and DNS settings can now be configured.
  Choose **Obtain an IP address automatically** to enable DHCP.

4.4 Setting the ISDN D-Channel Protocol

The ISDN interfaces of the system need to be correctly configured to the local "D - channel protocol" (e.g. Euro-ISDN, AT&T 5ESS, etc.). Because the ISDN interfaces can also be used e.g. for Windows network access, this setup is located outside the SCOTTY Config application.

To change the current "D - channel protocol" or to enter SPIDs, carry out the following steps:

- **Start | Control Panel**
- Open **System** in the category **Performance and Maintenance**
- Select **Hardware** folder and choose **Device Manager** button
- Open the **Network adapter** list
- Select **Stollmann tina-C4S** with the right mouse button and select **Properties** and choose the **ISDN** Folder
- Choose the **ISDN** folder
- Select the correct **Switch Type or D-Channel Protocol**
- Use **Configure** to configure further details like MSN (for windows networking) or SPID

All rights reserved.

4.5 DVI/VGA Configuration

Systems with a single, combined DVI/VGA-interface automatically restore the last saved interface mode during start-up. If required, the current mode can be changed using following keyboard shortcuts:

`Ctrl+Alt+F1`: Switch to VGA mode

`Ctrl+Alt+F4`: Switch to DVI mode

These shortcuts can be used „blind“ when, for example, the display has been changed and the system is configured to the wrong display mode.

Enhanced settings, like simultaneous operation of a DVI and VGA monitor, are available using the graphic card settings:

`Ctrl+Alt+F12`: Open graphic card settings dialog

*The dialog uses **Monitor** for VGA, **Digital Display** for DVI.*

Systems with multiple DVI/VGA interfaces or with a pure VGA interface can be configured using Window’s Display Properties dialog:

- **Start | Control Panel | Display**

4.6 System Security

SCOTTY systems feature a number of unique methods preventing the system from unintended changes, thus remaining the system operational even when the system’s software gets corrupted.

Usually, the system uses three partitions on the internal hard disk. System partition **C:** contains the operating system and the installed applications, the data partition **D:** is used for storing data like the phone book, videos, snapshots, etc. A hidden recovery partition is used by the System Recover (optional).

For security relevant applications, systems can be configured without data partition. The phone book and all recorded media will be stored to external memory devices. Before using such a system, the external media, like USB stick or USB hard disk, needs to be connected to the system.

All rights reserved.

Furthermore, the system partition can be protected:

On **change-protected** systems (optional) the data partition, if available, can be used freely to save data, the system partition is protected by a write protection mechanism.

Change-protected systems: Any configuration changes made in the system will be lost after reboot. See the following chapters below to write changes permanently to the disc.

On **write-protected** systems (security option) there is no data partition. The system partition is write-protected by hardware. All recorded media need to be stored to external memory devices.

Write-protected systems: Any configuration changes made in the system will be lost after reboot. Writing changed to disc is not possible! Changes can be made by SCOTTY only!

4.6.1 Write Changes to the Disc

Only valid for change-protected systems: If the changes can be applied without needing to reboot the system, use the following to apply changes to the system partition of the disk.

- Make a clean configuration: Fresh boot up, apply desired changes
- Log on as **Administrator**
- Apply further changes that require administrator rights
- Open Windows Command Window (**Start | Run**, enter "`cmd`")
- Enter "`ewfmgr c: -commit`"
- Reboot to apply settings, write protection becomes active again
- Check if settings are applied

As soon as the system is rebooted or switched off and on, the write protection mechanism is active again.

All rights reserved.

4.6.2 Permanently Disable the Write Protection

Only valid for change-protected systems: It is also possible to permanently disable the write protection mechanism, for example if software or driver-installation requires rebooting the system.

Warning: *With disabled write protection, the system's flash disk operates like an ordinary hard disk allowing random read write access. Disabling the write protection mechanism is a security risk. We strongly recommend only disabling write protection when absolutely necessary and enabling it again as soon as possible.*

- Make a clean configuration: Fresh boot up
- Log on as **Administrator**
- Open Windows Command Window (**Start | Run**, enter "`cmd`")
- Enter "`ewfmgr c: -commitanddisable`"

4.6.3 Enable the Write Protection

Only valid for change-protected systems: If write access to the hard disk is not needed anymore, it is strongly encouraged to enable write protection again:

- Make a clean configuration: Fresh boot up
- Log on as **Administrator**
- Open Windows Command Window (**Start | Run**, enter "`cmd`")
- Enter "`ewfmgr c: -enable`"

All rights reserved.

5 Network Access

5.1 Network Access

SCOTTY systems feature a wide variety on pre-defined network connection possibilities, depending on the hardware and software options of the system. For details about the network setup, see chapters System Interfaces, System Configuration, check the Appendix or ask the local SCOTTY representative.

For outgoing LAN/WAN or ISDN connections, the correct interface, LAN or ISDN is automatically chosen depending on the entered number format. Incoming calls are picked up from any interface.

5.2 LAN/WAN Connections

The LAN interface of the SCOTTY system needs to be connected to the Ethernet network.

A double-click on any "Teleport" icon starts the SCOTTY software.

The easiest way to establish H.323 connections is entering the IP address of the videoconferencing partner as a telephone number into the telephone book.

*The system's current IP address is shown under **Help** | **About Teleporter***

If the videoconferencing partner can be reached by name, it can be used as a telephone number in the telephone book, e.g. **demograz.scottygroup.com**.

If a gatekeeper is configured in the Configuration Utility, H.323 connections can be made by inputting the Name or Number of the other party into the Telephone Book.

For details, see chapter Format for Entering the Telephone Number.

All rights reserved.

5.2.1 INMARSAT BGAN / Swift Broadband Modem

The LAN interface of the SCOTTY system needs to be connected to the Ethernet port of the modem.

A double-click on any "Teleporter" icon starts the SCOTTY software. Enter the IP address or the host name of the remote system, choose a dial rate below the maximum data rate of the INMARSAT service in use, and press the **Dial** button. Or, use the **Low Cost** button for a 128 kbit/s call (on default).

When using background service, for reliable video calls choose a rate low enough to allow variance of the service's data throughput. When using a streaming class service, choose the dial rate 64 kbit/s below the data rate of the service to allow IP overhead.

For the best file transfer throughput, please use the background service. In the SCOTTY Teleporter software, use UDP (Sat optimized) as the preferred IP mode.

Before a call can be established, make sure the desired INMARSAT service is connected to the SCOTTY system. Depending on the modem and its configuration, several approaches are commonly used by the INMARSAT modem manufacturers:

- The background service can be pre-configured as default service, using the modem's web interface or the Launch Pad software.
- The modem needs to be connected to the service before a call can be made, using the modem's web interface or the Launch Pad software. This is often required when using a streaming class service.
- The service can be connected by dialing up a PPPoE connection.

  Such a connection can be configured on the SCOTTY system as following: Select **Start | Control Panel**, double-click **Network Connections**, and choose **Create a new connection**. Select Con**nect to the Internet**, then **Set up my connection manually**, then **Connect using a broadband connection that requires a user name and password**. Now general settings and settings required by the service provider can be made. After creating the connection, further settings are available by opening it and clicking on **Properties**; for example, some modems require a service class identifier entered into the **Service name** field.

  The PPPoE connection can be dialed up manually when required. Access to the connection can be simplified by placing a shortcut onto the desktop.

  For special applications, like using a streaming class only during a video call, the PPPoE connection can be entered as part of a Teleport phone book entry; see chapter Format for Entering the Telephone Number for details.

After connecting the SCOTTY system with the INMARSAT network, the overall network must be configured in a way that IP data packets are routed

All rights reserved.

between the SCOTTY system and the remote system. Again, depending on the INMARSAT modem and its configuration, different approaches are commonly used by the modem manufacturers:

- Modem or single user mode: The SCOTTY system directly receives the IP address supplied by the INMARSAT service provider.
- PPPoE: The SCOTTY system receives the IP address supplied by the INMARSAT service provider after dialing up the PPPoE connection.
- H.323 Gateway: The modem automatically handles the H.323 protocol.
- Port Forwarding: The modem assigns a local IP address to the SCOTTY system, but does not support the H.323 protocol. Port forwarding needs to be configured manually, see chapter The "LAN" – Tab for details.

When the network is not configured accordingly, often outgoing video and audio is possible, whereas the SCOTTY system will not receive incoming video and audio.

To receive incoming calls the SCOTTY system needs to be reachable from the internet. This means that the modem needs to get a globally routed, statically IP address from the INMARSAT service provider. Furthermore, the INMARSAT modem needs to be connected to the network in advance, preferably by using the auto-connect feature of the modem if available.

For details, please refer to the instructions from the modem manufacturer.

All rights reserved.

5.3 ISDN Connections

The ISDN interfaces of the SCOTTY system needs to be connected to the ISDN network.

A double-click on any “Teleporter” icon starts the SCOTTY software. Enter the phone number of the remote system, choose the desired dial rate, and press the **Dial** button. Or, use the **Low Cost** button for a 64 kbit/s call (on default).

When making a 2 x 64 kbit/s call, usually both channels of the call will use the same phone number. If two different numbers are required, enter both numbers, separated with a comma.

Choosing data rates of 128 kbit/s or higher will use the BONDIG protocol to establish the call. Only the phone number of the first channel needs to be entered, all other numbers are automatically exchanged.

For details, see chapter Format for Entering the Telephone Number.

5.3.1 INMARSAT GAN / Swift64 Satellite Modem

One ore more ISDN interfaces of the SCOTTY system needs to be connected to the ISDN ports of the modem.

A double-click on the pre-defined "Teleport" icon starts the software. Enter the phone number of the remote system. By choosing the **Dial** button a 2 x 64 kbit/s call is performed if supported by the INMARSAT modem. Pressing **Low Cost** dials a 1 x 64 kbit/s connection, choosing **Voice Only** will dial a regular voice call.

By selecting "Use 00 as Prefix (Satellite-Style Dialing)" in the dialog **Options | Dialing**, phone numbers starting with “+” can be used and are automatically converted into a satellite-compatible style.

To receive incoming calls, the calling station needs to dial one of the access numbers assigned by the INMARSAT provider. For video and data calls, the 64 kbit/s access number must be used; for voice calls, choose one of the voice numbers.

If the INMARSAT modem supports 2 x 64 kbit/s incoming calls, the calling station needs to dial the 64 kbit/s data access numbers of both channels. Enter both numbers, separated with a comma, into the calling station’s phone book.

All rights reserved.

5.3.2 BONDING Calls with a INMARSAT Modem

Using multi-channel INMARSAT modems, video calls with data rates of 192 kbit/s and higher are possible by the SCOTTY Live Bonding feature (optional).

A double-click on the pre-defined "Teleport" icon starts the software. Enter the phone number of the remote system, starting with “00” and followed by the country code. A trailing “#” is not allowed and not required. Choose a data rate of 128 kbit/s or higher to use SCOTTY Live Bonding, and press the **Dial** button.

To receive incoming calls, the access numbers of the modem’s channels need to be configured once. Enter the 64 kbit/s data access numbers assigned by the INMARSAT provider into the ISDN tab of the SCOTTY Configuration Utility. Then the system can be reached by dialing the access number of the first channel.

Due to data slips common to satellite connections, the regular BONDING protocol can not be used with INMARSAT. The SCOTTY Live Bonding protocol overcomes this limitation and allows easy and reliable connections providing high video quality over satellite.

The SCOTTY Live Bonding feature needs to be activated on both sides of the connection.

5.3.3 INMARSAT BGAN / Swift Broadband Modem

The INMARSAT BGAN and Swift Broadband services not only support IP-based connections, but also regular voice and data calls.

If the INMARSAT modem features an ISDN port, it can be connected to the SCOTTY system to make and receive regular voice telephone calls. ISDN-based video and data calls are also possible, depending on the capabilities of the modem. See previous chapters for usage.

The SCOTTY system can be connected both to the LAN and the ISDN port of the INMARSAT modem. This way, high-bandwidth video and data communication is possible using the LAN interface, whilst regular telephone calls can be made via the ISDN port.

All rights reserved.

5.4 Synchronous Interface

5.4.1 INMARSAT-B Satellite Telephone

The appropriate adapter cable is inserted into the unit's optional network interface socket and connected to the satellite telephone. A double-click on the pre-configured SCOTTY Teleporter icon (titled: "Teleport [telephone name]") initializes the software.

For details see chapter Appendix or ask the local SCOTTY representative.

5.4.2 VSAT Satellite Connections

One end of the network cable is plugged into the optional network interface connector of the SCOTTY unit, the other end is connected to the satellite modem. A double-click on the correct pre-configured SCOTTY Teleporter icon loads the software. Synchronization can be started manually by opening the Dial dialog and pressing the **Dial** or **Low Cost** button.

Transmit and receive timing are independent from each other; something essential for satellite connections.

For details see chapter Appendix or ask the local SCOTTY representative.

5.4.3 KIV7 / STE

Connect the red side of the KIV7 / STE to the optional network interface of the SCOTTY unit. The black side of the encryption device is connected to your communication network (e.g. the ISDN network).

A double-click on the correct pre-configured Teleport "Teleport KIV" or "Teleport STE" icon initializes the hardware. After a secure connection has been established, the Teleport application will ring and synchronize the call.

For details see chapter Appendix or ask the local SCOTTY representative.

5.5 Other Networks

The SCOTTY Unit supports many other network configurations. For details see chapter Appendix or ask the local SCOTTY representative.

All rights reserved.

6 Teleport Details

6.1 Teleport Details

Based on many years of experience in the area of video-communication and user interfaces, SCOTTY systems are easy-to-use, multi-featured tools with clear user interfaces. All functions that are frequently used are directly available by clicking on buttons; the less used functions are found through the menus.

To avoid undesired changes to the Teleport configuration, new settings need to be saved manually. This way, Teleport will come up each time with well-defined settings. Alternatively, the system can be configured to auto-save settings. See chapters Save and Preferences for details.

On default, many Teleport settings are lost when SCOTTY Teleport is closed. To save settings permanently see chapter Save.

When saving application settings, change- or write-protected systems (optional) may require additional steps to keep saved settings permanently. See chapter System Configuration for details.

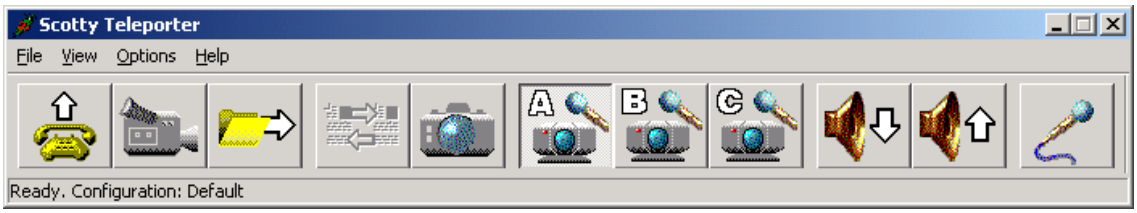
System recovery procedures will reset all user defined settings. See chapter System Recovery for details.

SCOTTY Teleport has a unique setting management system feature to make video-communication easier for the user. For different operational modes of the application, the settings of the Video window will be saved. When switching modes, the corresponding adjustments are reloaded. This frees the user from having to constantly reset these settings. See chapter Video Window for details.

All rights reserved.

6.2 The Main Window

The SCOTTY Main Window comprises of the title bar, the menu bar, and the toolbar(s). The menu bar includes the menu options **File, View, Options** (when not deactivated) and **Help**, whose functions are described in the next pages.



The SCOTTY Teleporter Main Window

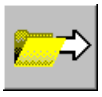
The toolbars in the Main Window can be repositioned individually and dragged to the Windows "Desktop". This is done by clicking between two buttons or on the "strip" near the button's edge and dragging the toolbar to the desired position. Under **View | Toolbars**, the toolbars can be activated and deactivated and their size (large, small) can be set.

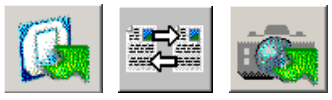
6.2.1 The Standard Toolbar

The **Dial** button displays the Telephone Book. The desired remote station can be called by selecting the name appearing on the list by mouse or keyboard. The videoconference is started by clicking the **Dial** button or double-clicking the remote station's name.

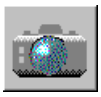
An ongoing videoconference can be terminated by clicking the **Dial** button – now depicting an arrow pointed downwards.

The **Recorder** button starts the Record and Play mode (optional). This enables audio and video sequences to be saved onto the hard drive and replayed at anytime.

 The **File Transfer** button starts the SCOTTY File Transfer function - designed to achieve the highest possible data rate.

 The **Share** button enables data sharing during an ongoing videoconference. Depending on the configuration of the local and remote system, the button automatically switches between H.239 Dual Video (optional), T.120 Netmeeting and the Snap & Send feature.

All rights reserved.

 With **Snapshot** a still image of the video can captured. The snapshots are copied into the clipboard and are stored automatically as JPG files into the `Records` folder in the resolution of the video source.

By clicking **Preset A** the first video and audio setting is selected. These settings can be defined in **View | Audio & Video Controls**. **Preset A** typically activates the preset for the live camera. When the mouse cursor is positioned in the button, a "Tool Tip" appears, displaying the defined name for this preset.

Preset B activates the second video and audio preset.

By clicking **Preset C**, the third video and audio setting is activated.

Volume Down decreases the volume.

Volume Up increases the volume.

Mute interrupts the transmission of the audio signal. When activated (indicated by a red crossed-out microphone), this feature makes the local conversation private. The transmitted audio is resumed by pressing **Mute** again.

All rights reserved.

6.2.2 Camera Control, Controlling the Camera

The **Camera Control** toolbar (activated by **View | Camera Control**) controls the current local camera as well as the far end camera.

The Local Camera Control toolbar

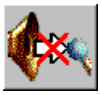
The **Local/Far end camera** button switches between the local and far end camera toolbar.

The Far End Camera Control toolbar

The toolbar can be docked into the Main Window or placed where desired. When the mouse cursor is positioned on a button, a "Tool Tip" appears displaying the function of the button.

6.2.3 Audio, Controlling the Audio System

The function of the **Audio** toolbar (activated by **View | Toolbars | Audio System**) is only available if an external audio system is configured by SCOTTY.

 **Train** starts a process in which the room acoustics are analyzed to eliminate acoustic feedback from the loudspeaker to microphone. This process involves playing a signal from the loudspeaker to evaluate its "reflection". This function should always be started when the room acoustics are changed in some way.

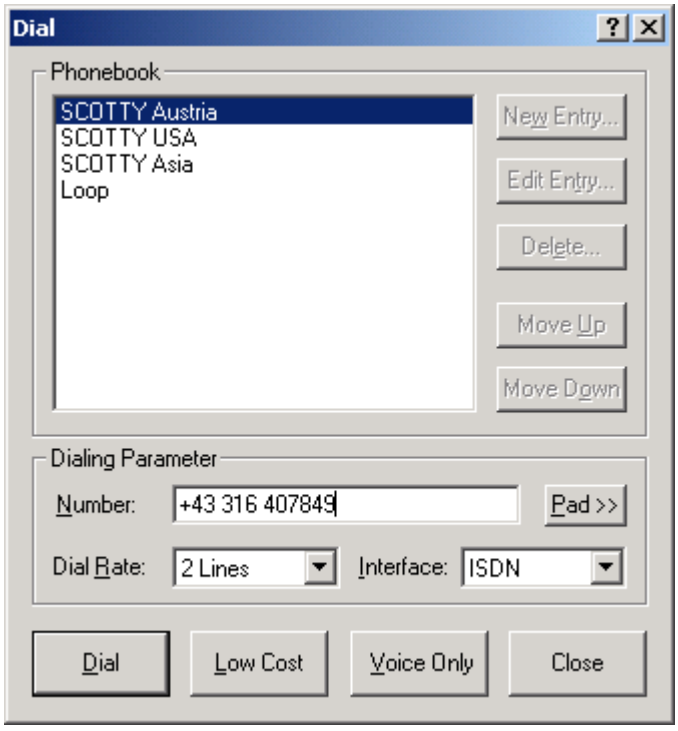
All rights reserved.

6.3 The File Menu

The File menu includes the following items:

Dial…	F2
Disconnect	Shift+F2
Recorder…	F3 (optional)
File Transfer…	F4
Share…	F5
Share (H.239)	Alt+F5
Share (T.120)	Ctrl+Alt+F5
Share (Snap&Send)	Ctrl+F6
Snapshot	F6
Far End Cam Ctrl	Shift+F5
Exit	F10

6.3.1 Dial, Making a Call



The Dial dialog box

The menu item **Dial** displays the Telephone Book. The user can now choose the desired remote station from the list with the help of the mouse or keyboard or alternatively directly enter the phone number or IP address into the edit field **Number**. In case of selecting an entry from the phone book the number is displayed inside this edit field as well.

All rights reserved.

A click on **Dial** or a double-click on the remote station name in the Telephone Book closes the Dialog and begins the dialing to the selected remote station. A dialog box is displayed while the dialing is taking place. If the **Cancel** button is pressed, the dialing process is aborted.

Low Cost begins a videoconference to the selected remote station with a reduced bandwidth. For example, an ISDN connection using only one B-channel (instead of the normal two), reduces the running costs of a video-conference connection by fifty percent.

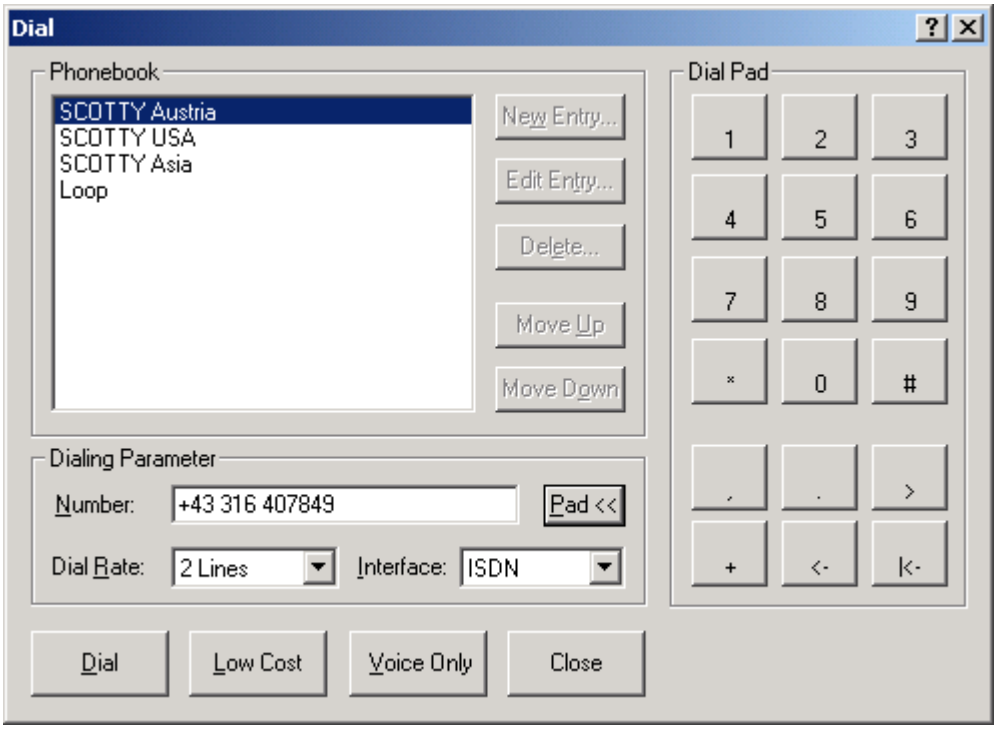
Voice Only enables a voice call to any telephone, if supported by the current network type.

Close closes the dialog.

Dial Rate allows the user to select the dial rate to be used. The available choices are dependent on the selected interface.

Interface selects the interface to be used for this call. The available choices are dependent on the present hardware and shortcut used to start the software.

Pad >> brings up an additional dial pad (see below) used to directly enter a phone number or IP-address without using the keyboard. This dial pad can be hidden by clicking **Pad <<**.



The Expanded Dial dialog box

New Entry… opens a dialog box to create a new Telephone Book entry.

Edit Entry… opens a dialog box to alter the currently selected entry.

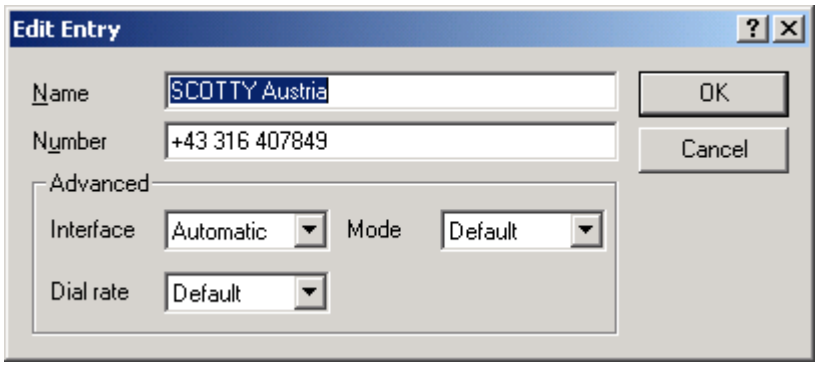
Delete… is used to delete the currently selected entry. If this operation is confirmed by a **Yes** then the selection is deleted.

All rights reserved.

Move up repositions the entry one step up in the column.

Move down repositions the entry one step down in the column.

6.3.2 Creating or Modifying a Telephone Book Entry



The Edit Entry dialog box

The dialing parameters for a remote station can be entered by pressing the button **New Entry** or **Edit Entry** in the expanded Telephone Book dialog box.

Name defines the name of the remote station which appears in the Telephone Book. If the network supports "caller's number" the name of the remote station is also displayed on an incoming call.

The telephone number of the remote station is entered in the **Number** field (the appropriate format is described in the next chapter).

Interface describes the type of network interface used. Depending on the hardware configuration, varying settings can be chosen. Usually the field is left on "Automatic" – meaning the default interface set under **Options | Dialing** is used, or another available interface identified by the phone number entered.

Dial Rate defines the used data rate for the call. According to the set interface, several rates can be selected. Usually the field is left on "Default"- meaning the default value of the used interface is taken. The default values for each available interface can be set under **Options | Dialing**.

Mode defines the network mode to be used, if supported by the network interface. Usually the field is left on "Default"- meaning the default value of the used interface is taken.

OK confirms the entry and closes the dialog box.

Cancel aborts the changes and closes the dialog box.

*The user can create a Telephone Book entry for every desired remote station. This entry stays valid even if the system's location is changed. By entering the data of the system's current location under **Options | Dialing**, Teleporter automatically knows if the dialing prefix must be dialed. This "intelligent" Telephone Book administration also makes the same Telephone Book valid for varying communication networks (ISDN, INMARSAT).*

All rights reserved.

If a Telephone Book entry is set to a value which is not supported by the currently used hardware, it is indicated "Not Supported" and the default values will be automatically used.

6.3.3 Format for Entering the Telephone Number

The Telephone Book supports different number formats; the basic distinction is between LAN (H.323) and ISDN (H.320) numbers.

6.3.3.1 ISDN (H.320) Telephone Numbers

The number can be entered directly:

```
<number>
```

Example: `0043 316 407849`

Or, the number can be entered using the international format:

```
+<country code> <area code> <number>
```

Example: `+43 316 407849`

Spaces can be inserted to make the numbers more readable if desired.

If the "+" in the telephone number is not entered, the number is dialed directly without alteration. This option can be useful when, for example, an internal call is dialed through an in-house system.

In order to ensure that the Telephone Book entries remain valid independent of location and network type (e.g. ISDN, INMARSAT), an "intelligent" process is implemented to make the numbers entered in the Telephone Book continue to function regardless of the current situation. When such a telephone entry beginning with "+" is selected, the codes necessary for the current network type are added and, according to the settings under **Options | Dialing**, prefixes are either added or prefix numbers in the Telephone Book entry are ignored. For example, a domestic call (e.g. through ISDN) is recognized by Teleporter automatically, triggering the removal of the international prefix.

If different numbers are required for a remote station (e.g. two ISDN lines) the entire numbers can be entered separated by commas. Moreover it is possible to enter the common part followed by a dash and the rest of the number segments separated by commas.

Example: `+1 408 252 9447,+1 408 252 9457`

Example: `+1 408 252-9447,9457`

If an extension through a gateway (TCS4 extension) to a LAN endpoint is desired, add ">" and the extension number.

Example: `+43 316 407849>1920`

All rights reserved.

6.3.3.2 LAN (H.323) Telephone Numbers

Phone numbers can be entered in one of the following formats:

- IP address e.g.: `91.209.75.198`
- Hostname, e.g.: `demograz.scottygroup.com`
- Computer name inside a domain or workgroup, e.g.: `SI2038010`
- H.323 calls using an external gatekeeper:
  Format: `<ip-address of gatekeeper>,<E.164 address>`

Optionally, following parameters can be used:

- H.323 calls: The name of the network connection to be dialed up before the call is made and to be disconnected when the call ends.

  Format: `RAS:<connection> <number>`

  Example: `RAS:Streaming 21.23.24.11`

  The network connection needs to be configured in the system's **Network Connections**. If the name of the connection contains spaces, it needs to be put under single quotes.

  Example: `RAS:'Streaming 256' 21.23.24.11`
- LAN Filetransfer calls: The port number of the SCOTTY File Transfer application on the remote system.

  Format: `<number>:<port>`

  Example: `121.23.24.11:14000`
- H.323 calls using an external gatekeeper: The H.225.1 port number.

  Format: `<ip-address of gatekeeper>:<port>,<E.164 address>`

If a gatekeeper is configured in the Configuration Utility, the gatekeeper is used to resolve the telephone number for H.323 calls. Following phone number formats are available in this case (note that inputs are case sensitive):

- IP address, e.g.: `121.23.24.11`
- Number (E.164 address), e.g.: `TEL:1920`

  The `TEL:` can be left out if LAN is the current interface.
- Name (H.323 ID), e.g.: `SI2038010`

  If the name is numerical only, a prefix `NAME:` is required.

6.3.4 Disconnect, Terminating a Call

This terminates an ongoing call and the system returns to the standby mode.

All rights reserved.

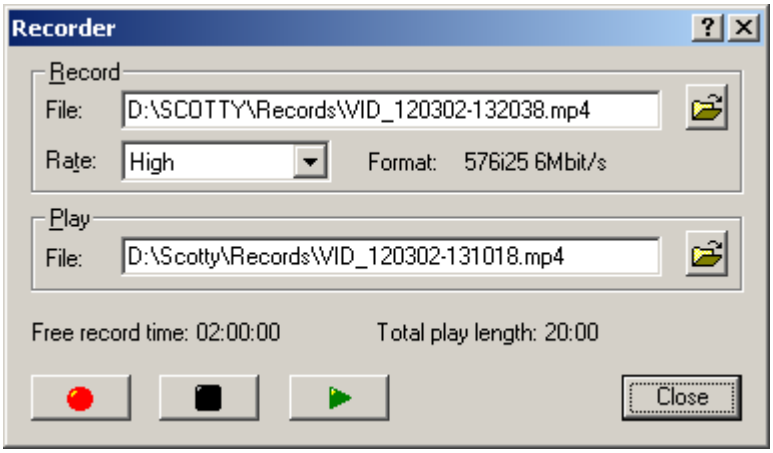
6.3.5 Recorder, the Record and Play Mode

To record or play back videos, click the **Recorder** button to open the **Recorder** (optional). The recorder mode enables audio and video sequences to be recorded into a file on the hard disk and later replayed. The audio and video is highly compressed according to the MPEG (optional AVC/H.264) standard, enabling very long sequences to fit onto the hard drive.

Analog video inputs (SD) and digital (HD-SDI, optional) inputs are available for recording. The Recorder will record the video selected under **Screen** in the Video Switching Matrix (see chapter Video Switch Matrix for details), and the audio selected in **Input Mixer** and **Auxiliary In** (see chapter Audio). For special applications, like surveillance systems, the Recorder can be configured by SCOTTY to record the video selected under **Transmit** instead.

The recordings, saved as a file, can be transferred at a later time ("Store & Forward"). This feature offers the advantage that a high quality video can be recorded "off-line" with high data rates and sent at a lower data rate (for example 256 kbit/s) – at a correspondingly longer transmission time.

"Store & Forward" is ideal for low bandwidth networks where the problem of low data rate no longer prevents the transmission of high quality video and audio files. The originally recorded sequence is restored at the remote end by replaying the video/audio file via the Recorder.



The MPEG-Recorder dialog box

In the section **Record**, the settings for the recording are defined. It is only available if the MPEG-recording option is installed.

In the field **File**, the name of the file is entered where the sequence will be stored. When opening the Recorder dialog box and after every recording, a file-name consisting of date and time for the next recording is automatically suggested.

enables the user to look through the record files on the hard drive. If one of them is selected it will be overwritten by the next recording.

All rights reserved.

Rate chooses the data rate and resolution at which the recording takes place.

AVC/H.264 option: Depending on the format of the video source the settings **High, Medium, Low** and **Lowest** corresponds the following recording settings:

High, Medium:

Resolution of video source	Rate			
	High		Medium	
	Resolution	Bitrate	Resolution	Bitrate
1080i60	1080i60	36Mbit/s	1080i60	18Mbit/s
1080p30	1080p30	36Mbit/s	1080p30	18Mbit/s
1080i50	1080i50	30Mbit/s	1080i50	15Mbit/s
1080p25	1080p25	30Mbit/s	1080p25	15Mbit/s
720p60	720p60	32Mbit/s	720p60	16Mbit/s
720p50	720p50	26Mbit/s	720p50	13Mbit/s
720p30	720p30	16Mbit/s	720p30	8Mbit/s
720p25	720p25	13Mbit/s	720p25	7Mbit/s
SD NTSC	480i60	6Mbit/s	480i60	3Mbit/s
SD PAL	576i50	6Mbit/s	576i50	3Mbit/s

Low, Lowest:

The resolution of the recorded video is limited to SD format (NTSC or PAL, depending on the input format). The data rate for “Low” is set to 1,5Mbit/s and for “Lowest” to 750kbit/s. These settings are ideal to record SD or high-resolution video sources and transferring them via “Store & Forward” to a remote party.

Audio selects if audio is recorded. AVC/H.264 option always records audio.

In the section **Play**, the file to be played is selected. After every recording the field is set to the last recorded file for immediate play back.

With stored MPEG-files can be selected to play back.

Free record time displays the possible record time which is calculated by the indicated data rate and the free space available on the hard disk.

Total play length shows the play time of the selected MPEG-file in the **Play** field.

Record starts the record process.

Stop stops the recording or playback.

Play plays the file currently in the **Play** field. The playback can be paused by clicking into the video area. The seek bar indicates the progress of the current clip. The progress indicator can be dragged to select a place in the clip to start playing.

All rights reserved.

*The location of the recorded files can be defined in **Options | Directories**. The folder can be opened using **View | Recorded Files.***

When selecting the digital SDI input under in the video switching matrix, the recorded video will be always this source, even during an ongoing video conference.

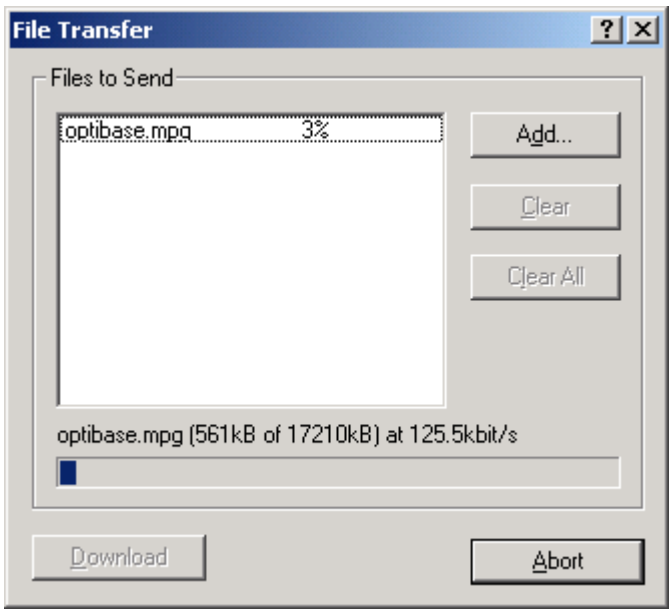
If the digital SDI audio input is selected as audio source in the audio dialog, this audio is recorded exclusively. If digital audio is not selected, all other audio sources according to the settings in the audio dialog can be recorded. When selecting an analog video input under transmit, the digital audio from the SDI source cannot be recorded.

6.3.6 File Transfer, Transfer Files Efficiently

The File Transfer function makes it possible to exchange stored files between two SCOTTY video-communication systems through a direct data transfer or during a videoconference. This feature has been specially designed to exploit the available network data rate to the highest possible degree. This high efficiency is also achieved when, for example, long signaling delays occur during satellite connections.

*The SCOTTY File Transfer is only possible between two SCOTTY systems using Teleporter or the File Transfer software. The **Send** button is disabled during a H.320 call when using data conference or far end camera control.*

Measurements have shown that the T.120 or FTP data transfer protocol makes the data rate through satellite links collapse to about 10 to 15%. The SCOTTY file transfer usually reaches a net throughput of more than 95% during GAN connections, and more than 90% in BGAN connections when using the UDP mode – plus further increase by the automatic online compression. Furthermore, files can also be transferred simultaneously in both directions with nearly no impact on the throughput.



All rights reserved.

The File Transfer dialog box during a transfer

Clicking on **Add** opens another dialog to select the files to be transferred. The selected files are added to the File Transfer list and are automatically copied into a separate transfer folder on the hard drive. After a file is successfully transferred, it is deleted from this folder.

Clear removes the selected file from the list and deletes it from the transfer folder.

Clear All deletes the entire list and all files in the transfer folder.

Clicking **Send** starts the transfer of the displayed files.

If a video-communication connection is already underway, the files are transferred immediately. If there is no running videoconference, the Telephone Book is displayed. After selecting the desired remote station, the connection is made, the files are transferred, and the connection is then immediately ended. This mode is called "File transfer only" mode, and is compatible to SCOTTY File Transfer software. The same functionality is true for **Send**, **Download** and **Exchange**. The buttons are disabled during a H.320 call, when using data conference or far end camera control.

*A file transfer during a H.323 call automatically uses the TCP or UDP mode which is supported by both sides of the call. If both modes could be used, the preferred mode configured in **Options | Data** is used. "File transfer only" H.323 calls will always use the preferred mode configured at the caller's side; if this mode is not supported by the remote end, the setting needs to be changed.*

When a file transfer is started, the SCOTTY remote system displays the **Received Files** dialog box (see chapter Received Files).

A running transfer can be discontinued through **Abort**.

Download will download files from a File Exchange Server (optional). A dialog box requesting username and password to log on to the server opens.

The name of the file being transferred, the number of already transferred bytes, as well as the actual data rate are continually displayed. A bar gives a visual representation of the progress of the transfer.

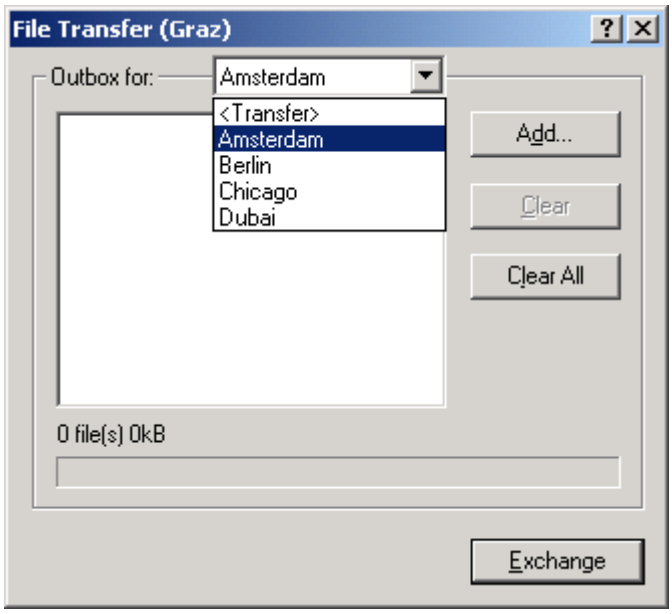
The File Transfer can be configured under **Options | Data**.

If the connection is suddenly broken when transferring a file with the SCOTTY File Transfer system, it is not necessary to retransmit the entire file. The SCOTTY File Transfer will finish the transfer from the point of disconnection without any data loss.

*Because the file(s) to be transferred are copied onto a separate folder on the hard drive, individual files can be assembled - for example from several USB sticks. The folder can be configured under **Options | Directories**.*

If the optional File Exchange Server is configured, the File Transfer dialog gets expanded:

All rights reserved.



The File Transfer dialog box when File Exchange Server is enabled

Changing **Outbox for** allows reviewing and modifying the files prepared for a specific client. Choosing **<Transfer>** switches the File Transfer dialog back to normal operation.

Pressing **Add** allows adding a file to the specified Outbox.

With **Clear** one entry in the specified Outbox can be removed

Clear all removes all files in the specified Outbox.

Pressing the **Exchange** button starts the file exchange. If there is no running videoconference, a phone number is suggested automatically by searching the phonebook for an entry having the same name than the target station.

For convenience, the system's username set in **Options | File Exchange** is shown in the caption of the File Transfer dialog.

For details, see chapter File Exchange Server.

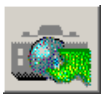
All rights reserved.

6.3.7 Share, Starting the Data Package

Depending on the capabilities of the local or remote system, and parameters entered under the menu **Options | Data**, this function either starts the T.120 data application package, the H.239 Dual video (optional) or activates the Snap & Send feature.

This button starts T.120 Netmeeting, see chapter T.120 Netmeeting for details on this.

This button starts H.239 Dual Video (optional), see chapter H.239 Dual Video Stream for details on this.

 This button starts Snap & Send, see chapter Snap & Send for details on this.

The data sharing requires bandwidth which can result in a decrease of the live video quality.

6.3.8 T.120 Netmeeting

The Share function starts the Netmeeting application, which automatically opens a data channel to the remote video communication station.

The NetMeeting main window

All rights reserved.

The **Hang Up** button terminates the data conference and closes the data channel.

When the **Share Program** button is clicked, all presently opened applications are listed in the **Sharing dialog** box. Select the name of the program you want to share and click the **Share** button. If an application is shared, both video-communication partners can see the application on the screen.

To allow the other site to control your shared program, select the **Allow Control** button. If the button is selected, the button name changes to **Prevent Control**. Selecting the **Prevent Control** button stops the collaboration.

To work in a program shared by someone else, select the **Control** menu of the shared program window and click **Request Control**. The person who shared the program receives a confirmation message and must click **Accept**.

During collaboration one site has control in the shared application(s) while the other site is remotely controlled. To obtain control, click the mouse button. To stop collaborating the shared program press **ESC**.

NetMeeting participants with earlier versions of NetMeeting can not take control of a program or computer shared by someone with NetMeeting 3.0 or later. However if applications are shared and collaborated by earlier NetMeeting versions, the NetMeeting 3 user can take control.

With the share and collaborate option it is possible to remote control a computer by sharing and collaborating Windows Explorer. In this way, for example, applications can be opened or software can be installed on the remote site. It is advisable, however, to pay careful attention not to delete or move important files accidentally.

Chat facilitates to send small text messages to the remote site.

By clicking the **Whiteboard** button the Whiteboard is opened on both video-communication sites.

*If the other site uses an earlier version of NetMeeting, select **Whiteboard (1.0-2.x)** from the NetMeeting Tools menu instead.*

For some purposes (e.g. large graphics) application sharing of MS Paint may be more effective than using the Whiteboard.

All rights reserved.

6.3.9 H.239 Dual Video Stream

The H.239 dual video stream feature enables to send or receive a second high-resolution video channel. When activated, pressing the **Share** button opens the second video channel that sends the content of the Windows Desktop. Now, sharing a PowerPoint™ presentation or any other application can begin. During the H.239 session, the **Share** button remains pressed. Pressing the **Share** button again closes the second high-resolution video channel.

The remote side sees the full content of the local display. Therefore, it is advisable to pay careful attention which applications and files are opened during the H.239 session.

When receiving H.239, on the remote side a presentation video appears. The receiving side can either close the presentation window, which will also close the incoming second video channel, or open the second video channel for itself by pressing the **Share** button, which will open a transmitting second video channel and closes the incoming one.

H.239 is only available during H.320 calls.

H.239 captures the content of the primary monitor. When Windows extended desktop is used, the secondary monitor can be used to display local content like the Teleport application and its live video window.

6.3.10 Snap & Send

The Snap & Send feature allows users to easily transfer a high resolution still image of the currently selected video source to the far end. The Snapshots are copied into the clipboard, stored in the `Records` folder as JPG files and then transferred to the remote party using the SCOTTY File Transfer feature. Snap & Send files are prioritized during an ongoing File Transfer.

Snap & Send can be used during an ongoing conference as well as in idle mode. When using in idle mode, the user gets displayed the Phonebook to enter the dial parameters of the remote party or, if **Auto dial** under **Options | Data** is activated, the currently active dial parameters are used. If the connection was established due to Snap & Send, it will be automatically disconnected after the transfer is complete.

The snapshot is automatically displayed on the receiving side if **Auto Show incoming Images** is activated.

For more details about snapshots, see chapter Snapshot; details about the data transfer can be found in the chapter File Transfer.

All rights reserved.

6.3.11 Snapshot, Taking a Still Picture

This function takes a still picture from the video source currently appearing in the Video Window (for example, an external camera or the received video). Snapshots are stored automatically as JPG files into the `Records` folder. Furthermore, the picture is copied into the Windows clipboard and is available to other applications.

The location of the `Records` folder can be defined in ***Options*** *|* ***Directories****. The folder can be opened using* ***View*** *|* ***Recorded Files.***

If a position information source like an external GPS unit is configured in the SCOTTY Configuration Utility, the position, date and time information is stored into to JPG file using an EXIF header. This allows tracking the position where a snapshot was taken.

Snapshots are taken from the video selected under ***Screen*** *in the Video Switching Matrix (see chapter Video Switch Matrix for details). For special applications, like surveillance systems, the snapshot source can be configured by SCOTTY to capture the video selected under* ***Transmit*** *instead (optional).*

6.3.12 Far End Cam Ctrl, Controlling a Far End Camera

This function is only available during an ongoing videoconference. It activates the Far End Camera toolbar at both sites and opens a low-bandwidth data channel for camera control.

For H.320 calls, the ***Far End Cam Ctrl*** *function is disabled during SCOTTY file transfer.*

For details see chapter View | Far End Camera Ctrl.

6.3.13 Exit, Ending the Program

This function shuts down the SCOTTY Teleporter.

All rights reserved.

6.4 The View Menu

This menu enables to activate the Video Window and the Camera Control toolbar, allows the arrangement of the toolbar(s) and the activation of several dialogs.

The following points are available:

Video Window	Ctrl+W
Camera Control	Ctrl+M
Tone Pad…	Ctrl+B
Audio & Video Controls…	Ctrl+O
Pic in Pic	
Toolbars	
Received Files...	Ctrl+R
Recorded Files...	Ctrl+Y
Connection Info...	Ctrl+S

*The settings are only "permanently" saved when they are saved manually with **Options | Save** or when the **Save on Exit** setting under **Options | Preferences** is activated. Otherwise the modifications are lost upon ending Teleport.*

6.4.1 Video Window, Manipulating the Video Window

The Video Window can be activated or deactivated through the menu **View | Video Window**. The size of the window can be adapted to the current situation by clicking on the edge or corner of the window and dragging it to the desired size. If the **Maximize** button is clicked, the Video Window expands to full screen. With the aid of the **Minimize** button, the Video Window can be "set aside". By clicking the appropriate button in the Windows task bar, the Video Window reappears.

When using a full screen Video Window it is possible to display the Teleporter function by clicking a mouse button. With another mouse click the Video Window is brought up to the front again. The same behavior applies to the H.239 presentation window.

SCOTTY systems distinguish between four different operational modes:

- Standby
- Videoconferencing
- Video and Data Conferencing
- Record and Play (optional)

The position and size of the Video Window in each of these modes can be individually adjusted. When switching modes, the corresponding adjustment will reappear. This frees the user from having to constantly reset the window positions and sizes. When these settings are saved, the window positions reappear each time the system is restarted.

All rights reserved.

6.4.2 Camera Control, Activating the Camera Toolbar

The camera control toolbar can be activated or deactivated through the menu **View | Camera Control**. The local camera as well as the far end camera can be remote controlled by the camera control toolbar, see next chapters.

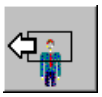
6.4.3 Local Camera Control, Controlling the Local Camera

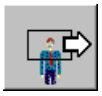
The Local Camera Control toolbar

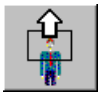
The availability of the functions in the camera toolbar depends on the current remote-controllable camera which is configured using the SCOTTY Configuration Utility.

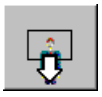
If more than one remote-controllable camera is configured in the system, the camera displayed on the screen is set for control automatically, provided that it is remote controllable. The auto-select feature chooses the controllable camera selected under "Screen" or "Transmit" or "Output" of the Video Switch Matrix under ***View | Audio & Video Controls*** *or selects the first controllable camera available.*

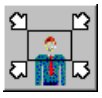
The first group controls the zoom function and the panning and tilting of the camera head.

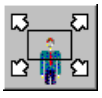
 **Local left** pans the local camera to the left.

 **Local right** pans the local camera to the right.

 **Local up** tilts the local camera upwards.

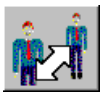
 **Local down** tilts the local camera downwards.

 **Local zoom in** zooms the lens of the local camera in.

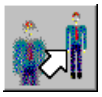
 **Local zoom out** zooms the lens of the local camera out.

If the **Local track** button is clicked, the person's image in the center of the field of vision is seized and automatically "followed" until a different local camera function is activated.

All rights reserved.

 By clicking the **Focus toolbar** button a group of focus functions can be displayed. Selecting the button again brings the first group of camera functions back.

Local focus near sets the focus of the local camera to closer objects.

 **Local focus far** sets the focus of the local camera to more distant objects.

Local auto focus activates the automatic focus of the local camera.

Next displays the next group of buttons in the toolbar.

The **Local/Far end camera** button switches between the local and far end camera toolbar. If this button is not checked, the local camera toolbar is displayed.

Clicking the **Next** button will display controls for saving and recalling up to seven local camera positions.

If one of the **Local preset** buttons is activated, that particular saved position is recalled.

If **Save position** is clicked, followed by one of the **Local preset** buttons, the current local camera position is saved as the preset.

All rights reserved.

6.4.4 Far End Camera Ctrl, Controlling the Far End Camera

The Far End Camera Control toolbar

Pressing a **Far end camera** button selects the corresponding far end camera or video input. The chosen far end camera can now be controlled. When the mouse cursor is moved onto a **Far end camera** button, the name of the camera appears.

If the remote site of the videoconference selects a far end camera, the SCOTTY system switches the transmitted video to the corresponding video input in the Video Switch Matrix, so that the far end can see and control the selected far end camera. The corresponding preset in the standard toolbar gets unselected to display the change. Selecting the preset again will reload the old settings.

SCOTTY systems support a "Video Source Switched" message. If both videoconference systems support this standard switching the transmitted video locally, will update the far end camera at the remote site.

Pressing the **Far End Camera Control** button during an ongoing videoconference activates the Far End Camera toolbar at both sites and opens a low-bandwidth data channel for camera control. To end far end camera control on both sites and close the data channel, press the **Far End Camera Control** button again. Far end camera control settings can be specified under **Options | Data.**

Next displays the next group of buttons in the toolbar.

The **Local/Far End camera** button switches between the local and far end camera toolbar. If this button is checked, the far end camera toolbar is displayed.

The availability of the functions in the far end camera toolbar depends on the selected far end camera.

All rights reserved.

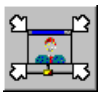
Clicking the **Next** button will display controls for zooming, panning and tilting of the camera head.

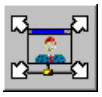
Far end left pans the far end camera to the left.

Far end right pans the far end camera to the right.

Far end up tilts the far end camera upwards.

Far end down tilts the far end camera downwards.

 **Far end zoom in** zooms the lens of the far end camera in.

 **Far end zoom out** zooms the lens of the far end camera out.

Far end focus near sets the focus of the far end camera to closer objects.

Far end focus far sets the focus of the far end camera to relatively distant objects.

Clicking the **Next** button will display controls for saving and recalling up to seven far end camera positions.

If one of the **Far end preset** buttons is activated, that particular saved position is recalled.

All preset buttons are always active, even if the far end camera does not support preset functions.

If **Save Position** is clicked, followed by one of the **Far end preset** buttons, the current far end camera position is saved as the preset.

All rights reserved.

6.4.5 Tone Pad, Playing DTMF Tones

The Tone Pad dialog box for playing DTMF tones

The tone pad allows playing DTMF tones manually while setting up or actually being in a call. It can be activated through the menu **View | Tone Pad**.

The keys can be either pressed using the mouse or directly by pressing the key on the keyboard if the dial pad window is active, and mimic the behavior of a telephone dial pad.

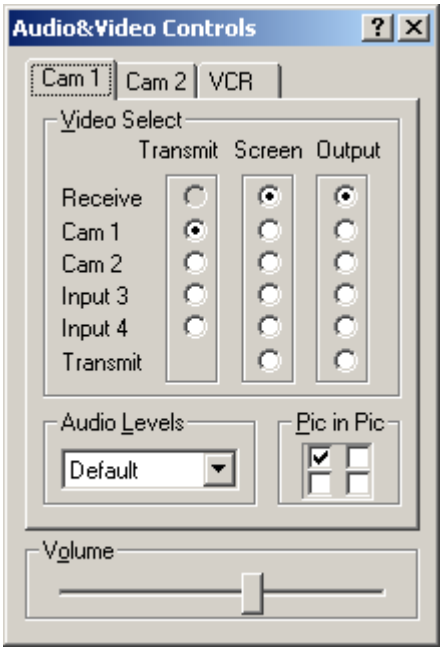
In idle mode playing DTMF tones is not possible; the keys are inactive and gray shaded.

All rights reserved.

6.4.6 Audio & Video Controls

The dialog box **Audio & Video Controls** enables the flexible setting of the audio and video parameters. The user can decide which video source should be shown where. Moreover, the corresponding audio preset (defined by the user in **Options | Audio**), the location of the picture in picture, and the speaker volume is set.

It is possible to define three individual presets and save them each with a different descriptive name. The name is changed by clicking on the name of an entry with the right mouse button and then entering the new name. Usually the first setting is reserved for the live camera, the second and third for external video sources. These presets can be easily called up through the buttons in the Standard Toolbar. To make the function of a preset immediately apparent, the name of the preset appears as a "Tool Tip" when the mouse cursor is moved onto the button.



The Audio & Video Controls dialog box

In **Video Select**, the independent selection of various video sources through a video switch matrix can be made. For more details see chapter Video Switch Matrix.

In **Audio Levels** a user defined audio preset can be chosen (set under **Options | Audio**).

Pic in Pic activates and controls the location of the "picture in picture", a small window displaying the transmitted video inserted into the received video. This function is also available under **View | Pic in Pic**.

Speaker Volume adjusts the volume. The setting of the volume is also possible through the Standard Toolbar.

All rights reserved.

When doing a professional videoconference, the control matrix not only enables the easy manipulation of the video and audio inputs and outputs, it also lets the user define presets for special situations. A typical example is a videoconference between two large audiences. In this case it is often required to switch between the internal camera and the internal microphone and the external camera and the external microphone. By arranging a preset for every situation, switching to a specific setup is made easy with only one mouse click!

***Example**: The illustration at the beginning of this section depicts an example of the **Controls** function in action. The preset labeled "Cam1" is active. The live video camera is transmitted to the remote station; the received video signal is displayed on the screen and outputted on the video output. Furthermore, because the "picture in picture" function is enabled, the video being transmitted to the remote station is inserted in the upper left of the "Receive" video. The Audio Levels of the preset "Default" are set.*

*The presets are only "permanently" saved when they are saved manually with **Options | Save** or when the **Save on Exit** setting under **Options | Preferences** is activated. Otherwise the modifications are lost upon ending Teleporter.*

6.4.7 Video Switch Matrix

The section **Video Select** in the **Audio & Video Controls** window enables the independent selection of the following video sources:

- video received from the remote system (**Receive**),
- one of the video inputs (**Cam1, Cam2, Input 3, Input 4**),
- Video transmitted to the remote system (**Transmit**).

These signals can be either:

- transmitted to the remote system (**Transmit**),
- displayed on the screen (**Screen**),
- Outputted to the video outputs (**Output**).

Which combinations are possible depends on the hardware configuration of your system.

*If **Transmit** is selected as a source then the video shown locally on the screen or video output is always the same as the video signal the remote station receives.*

If a video source is configured as SDI (optional), selecting this source will use the digital HD-SDI input of the system. See chapter The Configuration Utility on configuration details.

All rights reserved.

6.4.8 Pic In Pic, Setting the Picture in Picture view

In the **Pic in Pic** menu settings for the "picture in picture", a small window displaying the transmitted video inserted into the received video can be activated.

The entries **Disabled**, **Upper Left, Upper Right, Lower Left** and **Lower Right** correspond to the Pic in Pic settings under **View | Controls**.

6.4.9 Toolbars, Manipulating the Toolbars

The menu **View | Toolbars** is used to manipulate the toolbars.

Use Big Icons displays the toolbars with enlarged buttons.

Vertical Alignment reshapes the toolbars vertically. If this control box is activated, the buttons are enlarged, and the Recorder and File-Transfer buttons disappear.

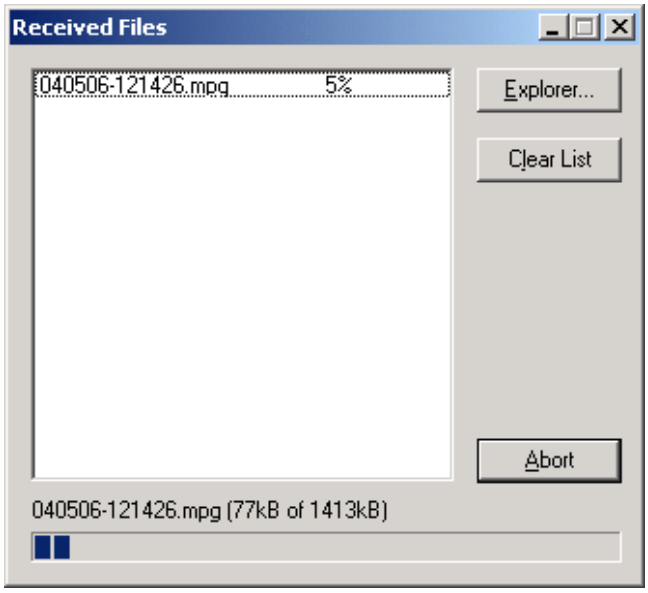
Standard enables the Standard Toolbar. The available functions are explained in chapter The Standard Toolbar.

Audio System switches on the toolbar to control an external audio system (see chapter Audio).

Status Bar alters the display of the status bar in the Main Window. The status bar displays contextual help, the currently running system operation, and other helpful information.

6.4.10 Received Files, Listing the Received Files

If a file is transferred by the SCOTTY File Transfer function of a remote station (see chapter File Transfer) the **Received Files** dialog box is automatically displayed.



The Received Files dialog box during a transfer

All rights reserved.

The **Received Files** dialog box displays a list of files already received as well as the transfer progress of the currently transmitted file. This is also displayed by a bar.

Clear List deletes the list (though naturally not the files in the Incoming folder).

Explorer… starts Windows Explorer. It is then very easily to copy, move, or open received files.

Close closes the dialog box.

Abort cuts off the currently active transfer of a file.

If the system is operating in File Exchange mode (optional) additional information is displayed to the user by showing the sender of a transmitted file. See chapter File Exchange Server for details on this.

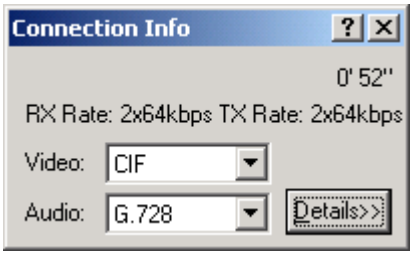
If the SCOTTY Teleporter software is active but unattended and the Automatic Pickup feature is activated (see chapter Preferences), the system can connect and receive file transfers automatically. After disconnection the dialog box Received Files remains visible. When the system is reattended, this is an indication that a file has been received.

*The location of the received files can be defined in **Options | Directories**. When operating in File Exchange (optional) mode, the files are stored in subdirectories named by the account transmitting these files.*

6.4.11 Recorded Files, View recorded Files

This function opens the Windows Explorer, showing the `Records` folder which holds the recorded videos and snapshots.

6.4.12 Connection Info, Displaying the Connection Status

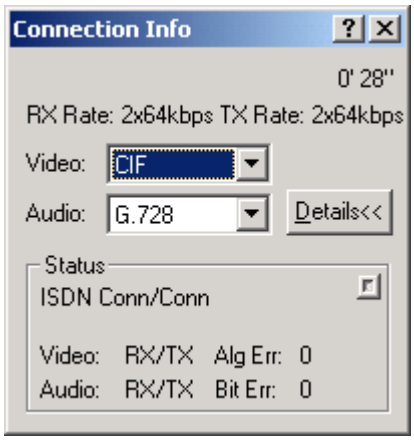


The Connection Info dialog box

The function **View | Connection Info** opens the Connection Info dialog box. All the current network data rates for receive (RX) and transmit (TX), the elapsed time of the ongoing connection, as well as the present video and audio standards are displayed here.

The video and audio standards of the running connection can be changed by clicking first the arrow next to the field and then selecting the desired standard from the appearing list.

All rights reserved.



The Expanded Connection Info dialog box

Details >> expands the displayed information.

In the expanded **Connection Info** dialog box, the currently used network interface and peripheral information is displayed. In the idle mode it corresponds to the default interface set under **Options | Dialing**. During a connection the video and audio receive (RX) and transmit (TX) status is also displayed.

Alg Err: shows the counter of the alignment errors.

Bit Err: displays the bit error counter.

A pulsing square indicates that the SCOTTY system is functioning properly.

Changing the audio and video standards during an ongoing videoconference is only possible if the remote station supports this!

All rights reserved.

6.5 The Options Menu

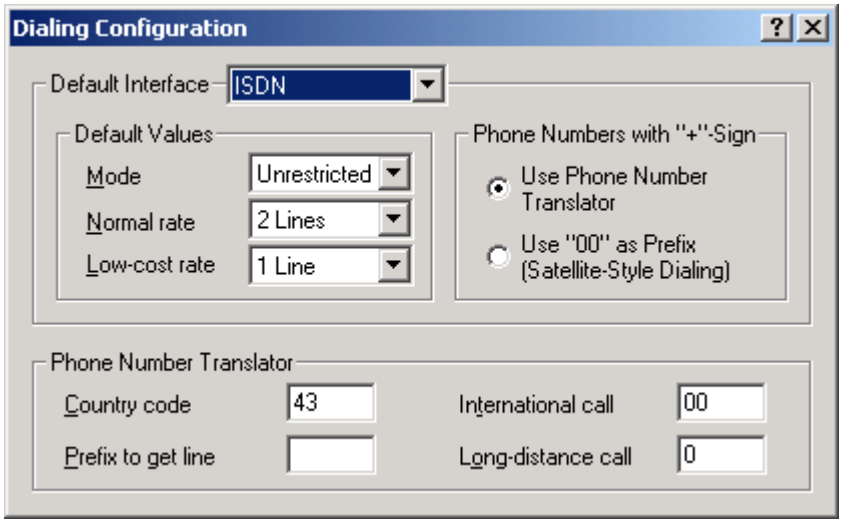
Defining the configuration presets is done through the **Options** menu. Because these normally are not often changed, and because incorrect values could negatively affect the system, this menu can be turned off (see **Options | Preferences**, chapter Preferences).

The following menu features are available:

Dialing...	Ctrl+D
Audio...	Ctrl+A
Video...	Ctrl+I
Data...	Ctrl+T
Directories…	Ctrl+Q
Preferences...	Ctrl+P
File Exchange…	Ctrl+F
Save...	
Factory Defaults...	

*The settings under **Dialing, Audio, Video** and **Data** are only "permanently" saved when they are saved manually with **Options | Save** or when the **Save on Exit** setting under **Options | Preferences** is activated. Otherwise the modifications are lost upon ending Teleporter.*

6.5.1 Dialing, Setting the Dialing Parameters



The Dialing Configuration dialog box

In the **Dialing Configuration** dialog box, the interface and the standard values for the dialing process can be set.

Default Interface describes the type of network interface used. This is usually set automatically when the Teleporter software is loaded (by clicking on the

All rights reserved.

appropriate Teleporter icon) unless manually altered. The choice of interfaces which can be selected is limited by the currently used configuration.

For phone book entries (see chapter Creating or Modifying a Telephone Book Entry) with the interface set to "Automatic", the selected interface is used unless substituted by an interface identified by the phone number.

For each interface the standard values for the dialing process can be set in the **Default Values** section. These are active when the corresponding interface is used for dialing, unless overridden by manual entries in the Telephone Book.

These values are individually saved for each interface. All interface-specific settings should be defined in this dialog so that the Telephone Book entries remain as universal as possible (interfaces set to "Automatic" and all settings set to "Default"). This ensures that the Telephone Book entries can be used regardless of the currently used network type (e.g. ISDN or INMARSAT).

Mode defines if **Unrestricted** (Nx64) or **Restricted** (Nx56) should be used as the standard setting, if supported by the interface. Usually **Unrestricted** is the correct choice although in some areas (parts of the USA, for example) **Restricted** must be selected.

Normal rate and

Low-cost rate set the standard value of the network data rate for the corresponding buttons in the Telephone Book.

Phone Numbers with "+"-Sign controls how the system translates phone numbers with a prefixed "+"-sign. If the radio button **Use Phone Number Translator** is checked, the settings entered in the section **Phone Number Translator** are used. If the radio button **Use "00" as Prefix (Satellite-Style Dialing)** is activated, phone numbers beginning with a "+"-sign are automatically converted into a satellite compatible style by substituting the "+"-sign with "00". Note: A "#" is not added and usually not needed. Depending on the used shortcut, the correct selection is active by default.

The settings in section **Phone Number Translator** are essential for the automatic completion of the telephone number. This setting must be reentered when changing the system's location.

In the field **Country code** the country prefix of the system's current location is entered. For example, 43 in Austria, 49 in Germany and 1 in the USA.

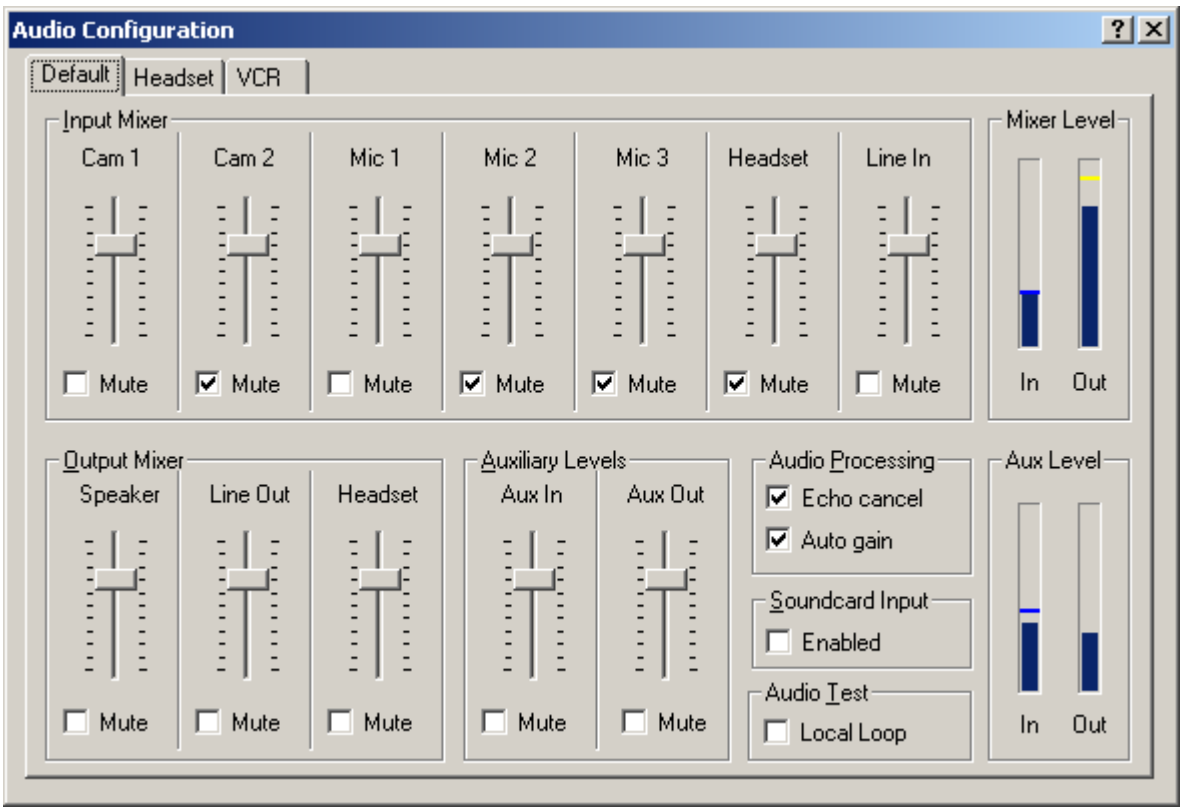
In the field **International call,** the prefix to call internationally must be entered. In Europe, usually "00" must be entered here, "011" should be entered in the USA.

In the field **Long-distance call**, the prefix to call long distance must be entered. In Europe, usually "0" must be entered here, "1" should be entered in the USA.

If a prefix is needed to get an outside line, this is entered in the **Prefix to get line** field.

All rights reserved.

6.5.2 Audio, Setting the Audio Levels



The Audio Configuration dialog box

The **Audio Configuration** dialog box enables the setting of the audio levels of the audio sources and audio outputs. By being able to define three groups of settings, frequently used configurations can be quickly activated.

A meaningful name can be entered for each of the three presets by clicking on the name field with the right mouse button (e.g. "Headset" is clicked and the desired name is inputted). These settings are available under **View | Audio & Video Controls**.

In section **Input Mixer**, the input levels of the acoustic audio sources (e.g. microphones) can be regulated. Activating **Mute** disables an input. All enabled inputs are mixed together and, if the "Mute" button on the main toolbar is not pressed, transmitted to the remote side during a video conference.

The section **Output Mixer** controls the base levels of the acoustic audio outputs (e.g. speakers). Activating **Mute** disables an output. The master output level itself is controlled by the "Speaker Volume" in the **Audio & Video Controls** window.

The section **Auxiliary Levels** regulates the auxiliary audio input and output (e.g. for a VCR). Pressing **Mute** disables the input or output.

If enabled, the **Aux In** audio signal is not only transmitted to the remote side during a videoconference, but also mixed to the audio outputs to be heard by the local audience.

All rights reserved.

Aux Out contains the same signal as the audio outputs, plus the audio of the acoustic audio inputs, so that both the received and the transmitted audio can be recorded by a device connected to Aux Out.

Mixer Levels In is a level meter for the sum of the acoustic inputs mixed by the Input Mixer. **Mixer Levels Out** shows the basic level that is fed into the Output Mixer. **Aux Levels** displays level information for the auxiliary input and output.

Echo processing is activated in the section **Audio Processing**.

Echo cancellation activates the echo canceller which prevents feedback from the acoustic outputs to the acoustic inputs.

Gain Control activates the automatic volume adjustment of the acoustic audio inputs.

The section **Soundcard Input** is used to enable and disable the Windows sound from the sound card to the audio outputs. To avoid interference it is automatically disabled during a videoconference. Note: **Aux Level In** also shows the signal level of this input.

Audio Test enabled testing the audio equipment without making a call. Enabling **Local Loop** mixes the acoustic audio inputs to the audio outputs. Caution: This will usually generate very loud feedback! When the Audio Configuration dialog is closed, **Local Loop** is disabled automatically.

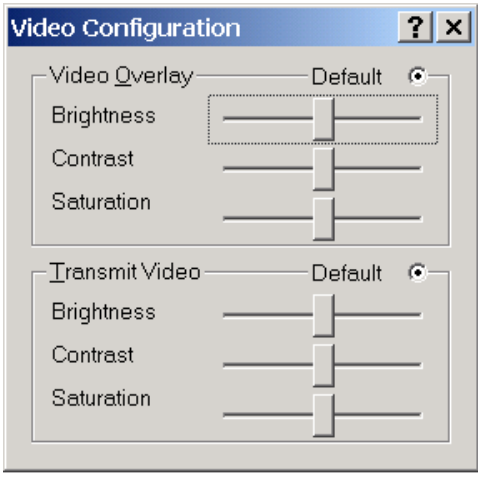
Which inputs and outputs are available depend on the hardware configuration of your system.

*The level meters and the local loop feature greatly simplify audio setup. To level the acoustic audio sources input by input, simply activate **Mute** for all other inputs, use the **Mixer Level In** meter to check the level and adjust it with the input slider of the input.*

*If a video source is configured as SDI (optional), the corresponding audio input in the section **Input Mixer** can be used to control the embedded audio on the HD-SDI input. The audio signal will then be activated together with the video signal, i.e. when the digital SDI input is selected under **Transmit** in the video switch matrix. See chapter The Configuration Utility on configuration details.*

All rights reserved.

6.5.3 Video, Setting the Video Parameters



The Video Configuration dialog box

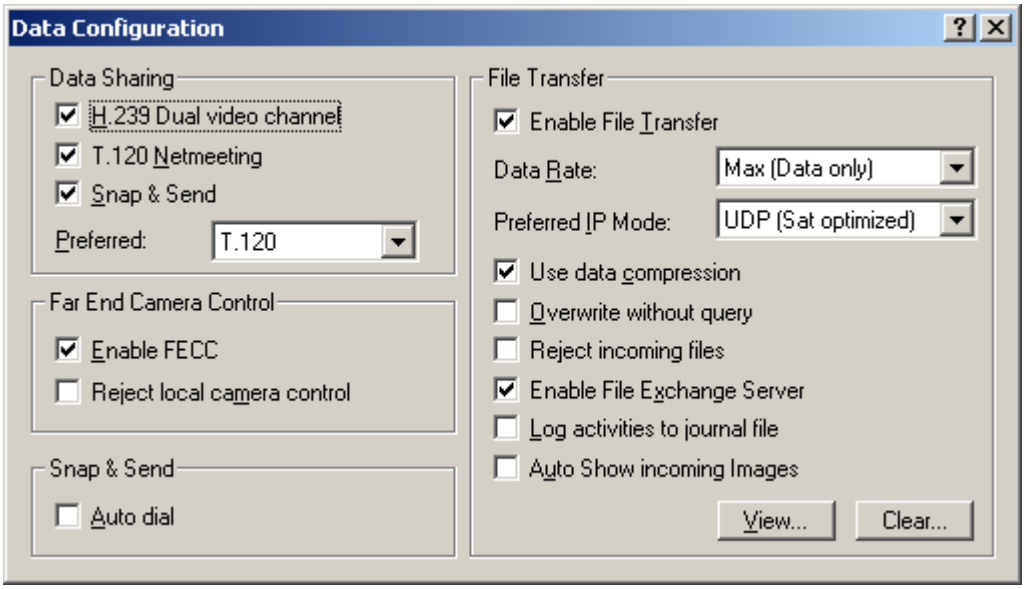
The dialog box **Video Configuration** contains the video parameter settings for the screen display and for the transmitted video.

The section **Transmit Video** enables the setting of the brightness, contrast, and saturation of the transmitted video. Again, if the **Default** control box is selected, the standard values are used.

The section **Video Overlay** is available if supported by the video display.

All rights reserved.

6.5.4 Data, Adjusting the Data Channel Parameters



The Data Configuration dialog box

This dialog box makes the selection of the data channel parameters possible.

Data Sharing controls the data sharing options.

H.239 Dual Video Channel enables the activation of the H.239 Dual Video Channel (optional).

T.120 Netmeeting enables the activation of the T.120 data package.

Snap & Send enables the Snap & Send feature.

Preferred: If more then one data sharing option is available at the same time, the **Share** button will switch to the preferred standard.

Far End Camera Control controls the Far End Camera Control functions.

Enable FECC enables the Far End Camera Control function.

Reject local camera control prevents the remote site from controlling the local system, but does not prevent controlling the remote system.

Snap & Send controls the Snap & Send function. Note: The section **File Transfer** allows further settings relevant for Snap & Send.

When not in a call and using the Snap & Send feature, activating **Auto Dial** will automatically dial up a connection using the current phonebook settings.

File Transfer controls the SCOTTY specific File Transfer function.

Enable File Transfer enables the SCOTTY specific File Transfer function.

All rights reserved.

In the section **Data Rate**, the bandwidth of the data channel and thus the distribution of video, audio and data can be adjusted to optimally fit current demands. The distribution selected only pertains to the current transfer; after the completion of the transfer, the original bandwidth distribution (video/audio) is restored. This setting does not apply to the TCP File Transfer.

Low sets a very low data channel bandwidth (5% of call rate in H.323 calls, 6.4 kbit/s in H.320 calls). In this case the videoconference is hardly affected, although the data transfer is correspondingly slower.

Medium establishes a moderate data transfer speed, audio and video remain active. In H.323 calls the data rate is limited to 20% of the video rate. In H.320 calls the audio quality is set to G.728, 24 kbit/s are used as data bandwidth, reducing the bandwidth available for video transmission.

If **High** is selected, audio remains active. In H.323 calls, video transmission is disabled and the bandwidth reserved for video is used for the File Transfer. On H.320 calls, the audio is set to G.728 and a data rate of 40 kbit/s is used; on 64 kbit/s calls, video is deactivated.

Max uses full bandwidth for the data transfer. The audio is turned off and the video freezes during transfer.

Preferred IP Mode: Selects the preferred data protocol for H.323 calls.

UDP (Sat optimized) utilizes the SCOTTY UDP/IP protocol designed for high efficiency and throughput over IP networks with long delay and high packet loss. This setting greatly enhances the data throughput over satellite links.

TCP uses TCP/IP technique and is optimal for low-delay and highly reliable networks such as terrestrial IP networks.

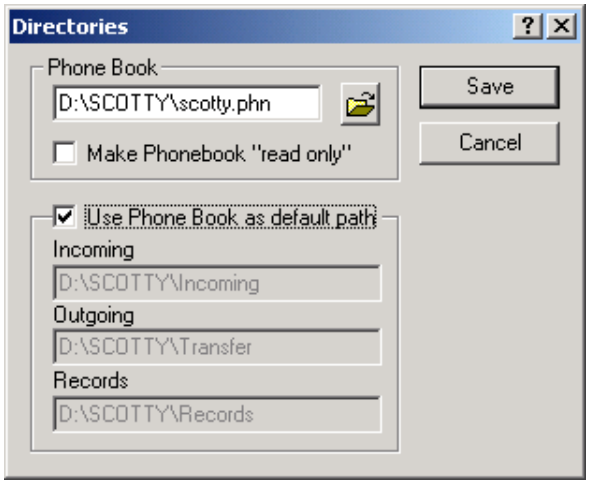
If the checkbox **Use data compression** is selected, all files get compressed for transmission if possible and decompressed by the SCOTTY system on remote site automatically. By selecting **Overwrite without query** existing files in the incoming-directory of the partner station with the same filename get overwritten without confirmation by the user. **Reject incoming files** prevents files from a remote station to be received. **Enable File Exchange Server** enables the optional File Exchange Server (see chapter File Exchange Server for details). When enabling **Log activities to journal file**, every activity of the file transfer (no matter if successful or not) is logged to a journal file.

When receiving snapshot files via File Transfer, the image files are opened automatically with the associated Windows program if **Auto Show incoming Images** is activated.

The journal file can be viewed by clicking on the button **View…** and it can be emptied by clicking on the button **Clear…**

All rights reserved.

6.5.5 Directories, Setting the SCOTTY Directory Structure



The Directories dialog box

With this dialog box the directory structure used by the SCOTTY Teleporter can be controlled.

Phone Book defines the location of the phone book. By activating **Make Phonebook "read only"**, the phone book cannot be modified by the user.

If **Use Phone Book as default path** is activated, the folders used for the file transfer utility, the optional Recorder or the optional SCOTTY File Exchange Server are located in the same directory than specified for the phone book. Otherwise the user can manually specify which directories should be used for incoming and outgoing files and where recorded files shall be stored.

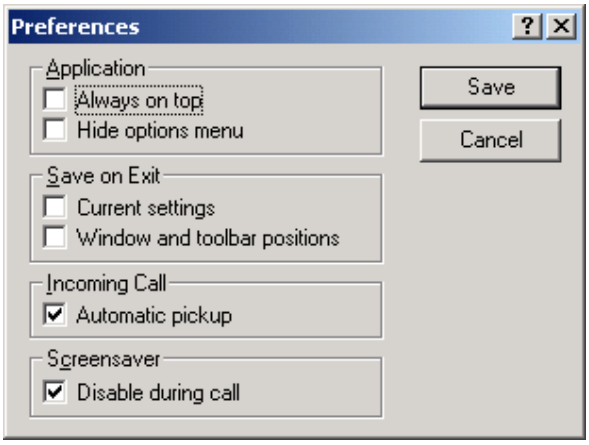
Save closes the dialog box and saves the current settings.

Cancel closes the dialog box without saving the settings.

The Telephone Book is saved in a text-file. Therefore, it can be edited with an external text editor; copying a different system's Telephone Book into the system is possible.

All rights reserved.

6.5.6 Preferences, Setting the System Parameters



The Preferences dialog box

This dialog box enables the user to manipulate some general settings as well as to set the system's reaction to an incoming call.

Always on top prevents the windows of other applications to cover the SCOTTY Teleporter windows.

Hide options menu removes the menu option **Options** from the menu bar (though its corresponding shortcuts remain active). This can prevent unintentional changes in these settings. Through the shortcut Ctrl+P the **Preferences** dialog box can be displayed and used to re-enable **Options**.

The section **Save on Exit** controls which settings should be saved when ending the Teleporter.

If **Current Settings** is activated, the current audio, video, dialing and data settings and presets are saved. These are reloaded at each start of SCOTTY Teleporter.

If **Window and toolbar positions** is activated, the most recent window and tool-bar positions are saved.

In the section **Incoming Call**, the system's reaction to an incoming call is set.

Automatic pickup defines the behavior when no user input follows an incoming call. When the system receives a call, a dialog box is displayed enabling the user to take or reject the call. If there is no input and **Automatic Pickup** is activated, the call is automatically taken.

Screensaver selects if the system’s screensaver is disabled or enabled during a video conference.

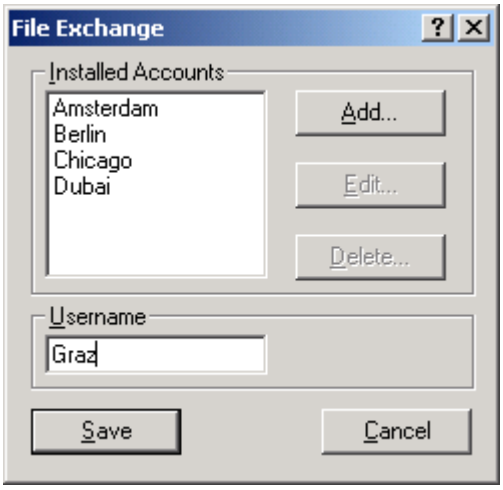
Save saves the chosen settings immediately.

Cancel cancels the changes and closes the dialog box.

All rights reserved.

6.5.7 File Exchange Server (optional)

The **File Exchange** dialog box allows the configuration of the File Exchange Server feature. It is available only if this option is installed in the system.



The File Exchange dialog box

Installed Accounts indicates which accounts are available on the local system. An account can be used by a remote system to download prepared files, or, if File Exchange is configured on both sides, for bi-directional file exchange.

With **Add…** a new remote user account can be added to the system. The **Account Settings** dialog box opens where **Username** and **Password** can be specified. A remote system needs these settings to be able to log on to the account. For file exchange, **Username** is also used to find the phone book entry to connect to the remote system.

Edit… allows editing the selected user account.

Use **Delete...** to remove the chosen account from the system. If empty, the account's incoming and transfer folders are also deleted.

Username specifies the system's username. During a file exchange, this entry, in conjunction with the password set in the account for the remote system, is used to log on.

Save closes the dialog box and saves the current settings immediately.

Cancel closes the dialog box without saving the settings.

For details, see next chapter.

All rights reserved.

6.5.8 File Exchange Server, Setup and Operation

The SCOTTY File Exchange feature (optional) greatly enhances the existing SCOTTY File Transfer. It is not only possible to actively send files to a target system, but files prepared at a remote system can be retrieved from there by clients. The SCOTTY File Exchange combines receiving and transmitting and therefore provides full data exchange between two systems.

The SCOTTY File Exchange Server can be used in two different scenarios:

- **Download only:** In this mode clients can download files from the File Exchange Server. For this mode only the server needs to be equipped with the File Exchange Server option, the clients need not have to have this option.
- **File Exchange:** In this mode each station features the File Exchange Server option. Files are transferred bi-directional between a central server and the individual clients, or even between any two stations. In this mode the exchange process can be initiated either by the server or the client.

These two different scenarios do not exclude each other but only define different ways of operation. Set up of networks operating both scenarios together is easily possible.

6.5.8.1 Download Only Mode

In this operation mode multiple clients can download files from a File Exchange Server. For each client an individual outbox is available on the server where the files for the download are prepared. Also, for each client a different password can be used to protect the prepared files from unauthorized download.

The server needs to be configured as following:

- For each client add an account with **Options | File Exchange**. Username and password can be chosen freely for each client.
- Check if **File Exchange Server** is activated in **Options | Data**.
- For unattended server operation, check if **Automatic pickup** is enabled in **Options | Preferences**. To monitor download activities on the server while not attended, **Log activities to journal file** in **Options | Data** can be enabled.

All rights reserved.

After configuration, files can be prepared on the server for downloading:

- Open the File Transfer dialog by clicking on the **File Transfer** button.
- Choose which files should be prepared for any particular client by selecting the client's name from the **Outbox for** list.
- Use the **Add…**, **Clear** and **Clear All** buttons to modify the list of files that shall be transferred to the client.
- Repeat above steps to prepare files for different clients.

A client can connect to the server at any time and download the files prepared:

- Open the File Transfer dialog by clicking on the **File Transfer** button.
- Click on the **Download** button.
- Enter **Username** and **Password**. These entries must match the settings for this client's account on the server.
- The **Dial** dialog opens. Connect to the server using the server's phone number and desired connection speed.
- Files prepared on the server are transferred to the client. The **Received Files** dialog opens and shows the progress of the transfer.
- On the server, each file is removed from the client's outbox after successful transfer and will therefore not be transferred again during a following download session.
- After all prepared files for this client have been transferred; the client automatically disconnects the call.

6.5.8.2 File Exchange Mode

In this operation mode multiple systems exchange data amongst each other. Each station can be configured with a number of accounts representing remote stations paired to this station. Which station is paired with which other is just a matter of needs; in a pure server-client scenario for example, a central server is paired with each client, but no client is paired with another client. For each pair of systems a different password can be used to protect the files from unauthorized access.

When two stations are paired, outbox and inbox with the name of the other station are created on each system. When a file exchange takes place, files provided to outboxes on each side are transferred to the corresponding inboxes at the other side.

All rights reserved.

The stations need to be configured as following:

- Each station must have a unique name, which must be set in **Options | File Exchange**, field **Username**.
- For pairing two systems, add an account on both sides with **Options | File Exchange**. Set **Username** to the unique name of the remote side. Use the same **Password** on both sides to protect the connection.
- Repeat above step for each exchange connection to be configured.
- A phone book entry can be created to simplify dial-up to a paired system. Open the phone book with **File | Dial** and add a **New Entry**. Set **Name** to the unique name of the remote system.
- Check if **File Exchange Server** is activated in **Options | Data**.
- For unattended server operation, check if **Automatic pickup** is enabled in **Options | Preferences**. To monitor exchange activities on the system while not attended, **Log activities to journal file** in **Options | Data** can be enabled.

After configuration, files can be prepared on a station to be sent to a paired system:

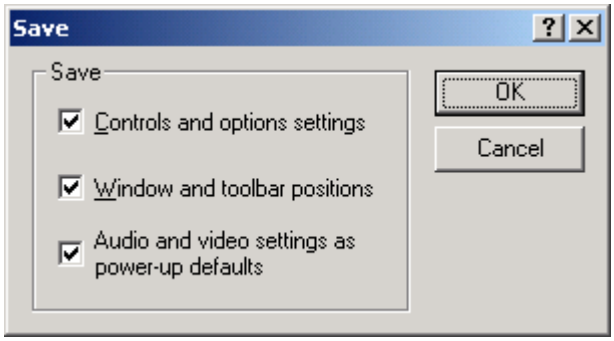
- Open the File Transfer dialog by clicking on the **File Transfer** button.
- Choose for which other station files should be prepared by selecting the station's name from the **Outbox for** list.
- Use the **Add…**, **Clear** and **Clear All** buttons to modify the list of files.
- Repeat above steps to prepare files for different stations.

A station can connect to a paired station at any time and exchange prepared files amongst each other:

- Open the File Transfer dialog by clicking on the **File Transfer** button.
- Select the station you want to connect to in the Combo Box **Outbox for**.
- Additional files can be added to this outbox if desired. The outbox can stay empty if files should be downloaded only.
- Click on the **Exchange** button.
- The system suggests the phone number to connect to the remote system if found in the phone book. Press **Dial** or **Low Cost** to start connecting, or choose **Phone Book** to use a different phone number or connection speed.
- Files prepared on this station are transmitted. At the same time files prepared on the other station are received. The **Received Files** dialog opens and shows the progress of this transfer.
- Each file is removed from the corresponding outbox after successful transfer and will therefore not be transferred again during a following exchange session.
- After all prepared files have been exchanged the call is automatically disconnected.

All rights reserved.

6.5.9 Save, Saving the Current Settings



The Save dialog box

This dialog box makes it possible to save the Teleporter settings manually.

The Save window is only available in the idle mode. During videoconferencing or recording, the dialog can not be opened.

When saving application settings, change- or write-protected systems (optional) may require additional steps to keep saved settings permanently. See chapter System Configuration for details.

System recovery procedures will reset all user defined settings. See chapter System Recovery for details.

Alternately, in **Options | Preferences** the system can be set to automatically save the configurations when ending the program.

By clicking **Controls and options settings**, the current audio, video, dialing and data settings and presets can be saved. These settings are recalled at every restart of the SCOTTY Teleport software.

Window and toolbar positions enables the window and toolbar positions to be saved for all modes (see info below). These settings are also recalled at every restart of the SCOTTY Teleporter software.

If the checkbox **Audio and video settings as power-up defaults** is selected, the current audio settings are saved as power-up defaults. So, after powering up of the system, Windows applications which support audio will use these settings.

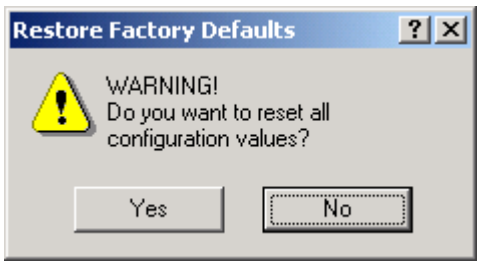
Cancel closes the dialog box without saving the settings.

OK closes the dialog box and saves the current settings.

SCOTTY Teleporter has a unique setting management system feature to make video-communication easier for the user. SCOTTY systems distinguish between four different operational modes: Standby, Videoconference, Dataconference and Recorder. For each of these modes, the size and position of the Video windows is saved separately.

All rights reserved.

6.5.10 Factory Defaults, Restoring the Factory Defaults



The Restore Factory Defaults dialog box

This function opens the dialog box to restore the factory defaults. The user's settings under **View | Audio & Video Controls**, all settings under the **Options** menu, and the window and toolbar positions are restored to the original factory values.

*The **Restore Factory Defaults** window is only available in the idle mode. During videoconferencing or recording, the dialog can not be opened.*

***Restore Factory Defaults** permanently overwrites all current settings! Especially the settings in the dialog box **Options | Dialing** under "Number Prefix" should be checked afterwards.*

When restoring application settings, change- or write-protected systems (optional) may require additional steps to keep these settings permanently. See chapter System Configuration for details.

6.6 The Help Menu

The following menu options are available:

Help Topics	F1
Context Help	Shift+F1
About Teleporter	Ctrl+F1

6.6.1 Help Topics, the SCOTTY Help System

The SCOTTY on-line help is opened through this menu option.

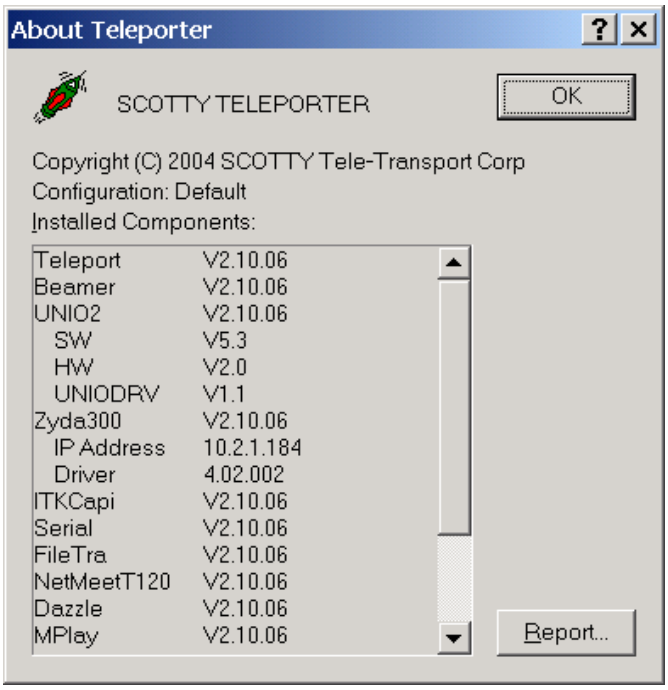
6.6.2 Context Help, the Topical Help

The contextual help feature is started through this function. When this menu option is clicked, the mouse arrow transforms into a question mark ("**?**") and it is then possible to click on an element (i.e. menu option, button, dialog box) to display information on that element.

All rights reserved.

A click on the question mark at the top right corner of a window or dialog box will display help information on the available features. Pressing F1 also opens the help function.

6.6.3 About Teleporter, Displaying the SCOTTY Configuration



The About Teleport dialog box

The system's version number and a list of installed components are displayed in this menu option. If the **Report** button is pressed, a text file with a more detailed installation listing is opened. This information is important when technical support from SCOTTY is necessary.

All rights reserved.

6.7 Shortcuts

In order to simplify the operation of the system, various "Shortcuts" are available. Frequently used functions can be activated directly through the use of certain key combinations instead of using the menus.

Key	Function	Menu
F1	display help	**Help**
Ctrl+F1	information on Teleporter	**Help | About Teleport**
F2	dial	**File | Dial**
Shift+F2	hang up	**File | Disconnect**
F3	start Record and Play mode (optional)	**File | Recorder**
F4	start File Transfer	**File | File Transfer**
F5	start Data Package	**File | Share**
Shift+F5	start Far End Camera Control	**File | Far End Cam Ctrl**
Alt+F5	start Data Package H.239	**File | Share (H.239)**
Ctrl+Alt+ F5	start Data Package T.120	**File | Share (T.120)**
Ctrl+F6	start Data Package Snap & Send	**File | Share (Snap & Send)**
F6	take snapshot	**File | Snapshot**
F7	decrease Volume	**View | Audio & Video Controls**
F8	increase Volume	**View | Audio & Video Controls**
F9	mute Transmit Audio	**View | Audio & Video Controls**
F10	end Teleporter	**File | Exit**
F11	dialog boxes in foreground, video in background	
F12	Video Window in foreground, dialog boxes in background	

All rights reserved.

Key	Function	Menu
Ctrl+A	open dialog box for audio configuration	**Options | Audio**
Ctrl+B	open tone pad dialog box	**View | Tone pad**
Ctrl+D	open dial dialog box	**File | Dial**
Ctrl+F	open dialog box for file exchange server (optional)	**Options | File Exchange Server**
Ctrl+I	open dialog box for video configuration	**Options | Video**
Ctrl+M	active camera toolbar	**View | Camera Control**
Ctrl+O	open dialog box for audio / video settings	**View | Audio & Video Controls**
Ctrl+P	open dialog box for presets	**Options | Preferences**
Ctrl+Q	open dialog box for setting directory structure	**Options | Directories**
Ctrl+R	Received Files	**View | Received Files**
Ctrl+Y	Recorded Files	**View | Recorded Files**
Ctrl+S	display the connection status dialog box	**View | Connection Info**
Ctrl+T	open dialog box for data channel settings	**Options | Data**
Ctrl+W	show video window	**View | Video Window**
Ctrl+1	select Control Preset 1	**View | Audio & Video Controls**
Ctrl+2	select Control Preset 2	**View | Audio & Video Controls**
Ctrl+3	select Control Preset 3	**View | Audio & Video Controls**

While the Telephone Book is displayed, the following Shortcuts are available:

Keys	Function	Button
Enter	dial	**Dial**
Shift+Enter	low cost dial	**Low Cost**
Ctrl+Enter	dial voice only	**Voice Only**
Insert	insert new entry	**New Entry**
Shift+Up	move entry upwards in the column	**Move Up**
Shift+Down	move entry downwards in the column	**Move Down**

All rights reserved.

7 System Recover

SCOTTY systems are optionally featuring an integrated system recovery, allowing recovering the system to delivery state. If application files are accidentally destroyed or the operating system is malfunctioning, the system can be put into a working state again by restoring the delivery state. Note: System recover is not needed for write-protected systems (security option).

SCOTTY systems are using up to three hard-disk partitions. The system partition `C:` contains the operating system and installed applications. The data partition `D:`, if available, is used to save data, videos and the phonebook. An additional hidden recovery partition is used by the SCOTTY System Recover mechanism. Restoring the systems delivery state can be done directly on device without any additional tools or media, even if the Windows operating system cannot be started anymore. If on-disk system recovery is not possible, due to a destroyed recovery partition or hard-disk, the system can be also restored using external recovery media (USB-sticks or DVD's).

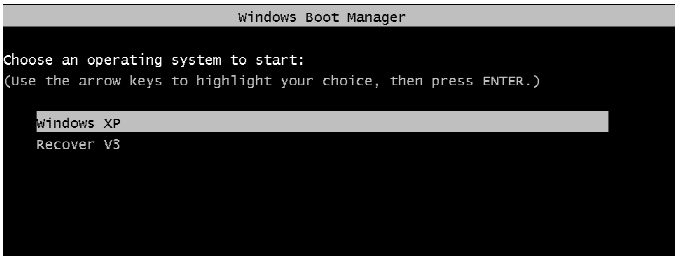
In summary SCOTTY system recover has the following features:

- Access control for all recovery functions using passwords.
- On-disk system recover without additional recovery media.
- System recover from bootable recovery media.
- Creation of new recovery media.
- Creation of a user defined hard disk image, a so-called "admin image". Apart from the delivery state, an arbitrary system state can be saved and restored at any time.
- Creation of full system backups to external media. An arbitrary system state, including the data partition, can be stored onto external media and restored at any time using the recovery software.
- Displaying of additional system information.

All rights reserved.

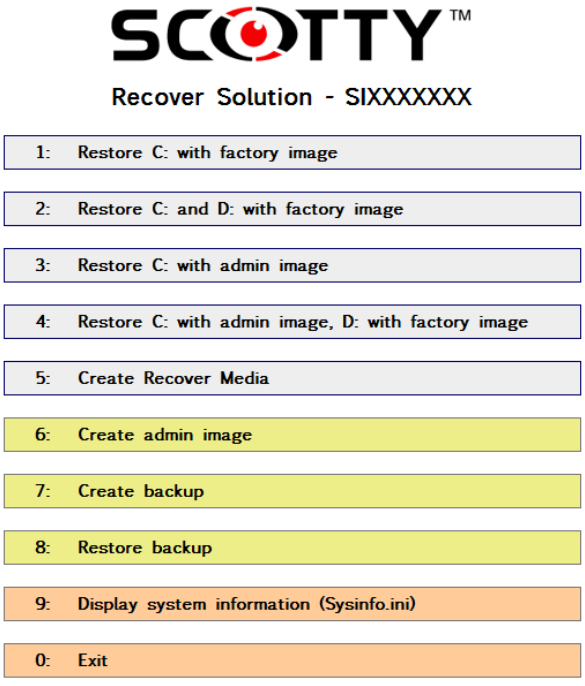
7.1 Restoring the System

- Reboot the computer.
- The boot manager screen is displayed for several seconds during the startup.


Windows Boot Manager
Choose an operating system to start:
(Use the arrow keys to highlight your choice, then press ENTER.)
Windows XP
Recover V3

Boot manager

- Choose **Recover V3** using the **Arrow-down** Key and press **Return**.
- After recovery software has started use password "**restore**" to proceed.
- The main menu of the recovery software is displayed. Depending on the system configuration some menu items might not be available.


SCOTTY™
Recover Solution - SIXXXXXXX
1: Restore C: with factory image
2: Restore C: and D: with factory image
3: Restore C: with admin image
4: Restore C: with admin image, D: with factory image
5: Create Recover Media
6: Create admin image
7: Create backup
8: Restore backup
9: Display system information (Sysinfo.ini)
0: Exit

Recovery software: Main menu

All rights reserved.

The recovery software can be left with ***Exit****.*
The menu item ***Display system information*** *can be used to display information about the hardware and software configuration of the stored delivery state.*

Choose one of the following functions:

- **Restore C: with factory Image:**
  The system partition **C:** will be restored to delivery state.
- **Restore C: and D: with factory Image:**
  The system partition **C:** and the data partition **D:** will be restored to delivery state.
- **Restore C: with admin Image:**
  Only available if an admin image exists: The system partition **C:** will be restored to the user defined state.
- **Restore C: with admin image, D: with factory Image:**
  Only available if an admin image exists: The system partition **C:** will be restored to the user defined state and the data partition **D:** will be restored to delivery state.
- Confirm the upcoming warning with **Yes**.
- Reboot computer after restoring.

Warning: *When restoring a partition C: or D: to delivery state* **all data** *stored on the particular partition after delivery* **will be lost**.

All rights reserved.

7.2 Restoring the System using Recovery Media

Restoring the system from a recovery media is only necessary if the recover partition is destroyed or not available.

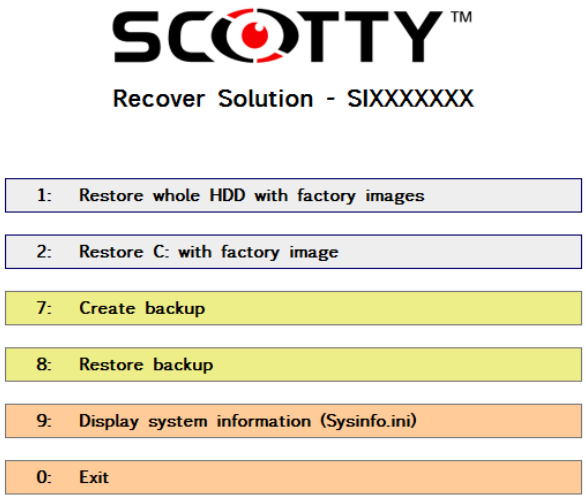
- Use only a recover media with the correct system serial number.
- Plug in the recovery USB stick or insert the first recovery DVD.
- Reboot the computer.

Booting from USB sticks is disabled at delivery state. When using a recovery USB stick, or if booting from DVD has been deactivated, follow the instructions below (instructions may vary depending on BIOS version):

If a BIOS boot menu is available: Press ***F10*** *or* ***F11*** *to enter the boot menu, depending on the system, and then choose the recover media from the list.*

If there is no BIOS boot menu, enter BIOS setup by pressing ***DEL*** *or* ***F2*** *at the beginning of the boot process. Select* ***Boot Options***, ***Boot Sequence*** *and put* ***USB-Media*** *respectively* ***CD-ROM*** *on top of the list. Save this setting and exit BIOS. After system recovery the boot sequence can be reset to the previous state.*

- The computer is now booting from the recover media.
- The main menu of the recover media recovery software is displayed.



Recover media recovery software: Main menu

The recovery software can be left with ***Exit****.*
The menu item ***Display system information*** *can be used to display information about the hardware and software configuration of the stored delivery state.*

All rights reserved.

Choose one of the following functions:

- **Restore whole HDD with factory images:**
  The whole hard disk will be reset to delivery state.
- **Restore C: with factory Image:**
  The system partition **C:** will be restored to delivery state. This function should be used only if the remaining partitions are functional.
- Confirm the upcoming warning with **Yes**.
- Reboot computer after restoring.
- If asked for, insert additional recovery DVD's.

Warning: *When restoring the whole hard disk to delivery state* **all data** *stored after delivery onto* **C:** *or* **D:** *as well as an optional* **admin image** *are* **lost!**

All rights reserved.

7.3 Creation of a User defined Hard Disk Image

As SCOTTY offers the possibility to create a user defined image of the system partition, am arbitrary system state can be saved and restored at any time. This user defined image, a so-called “admin image”, is saved onto the hidden recovery partition together with the factory image containing the delivery state. Thus, the restoration of the delivery state remains possible, even after creation of an admin image.

An admin image can be created after a possible change of the systems state or after installation of additional software. The saved system state can then be restored at any time without additional tools. Without an admin image, only the systems delivery state not containing any custom changes can be restored.

Creation of a user defined hard disk image:

- Reboot the computer.
- The boot manager screen is displayed for several seconds during the startup (see figure: Boot manager).
- Choose **Recover V3** using the **Arrow-down** Key and press **Return**.
- After recovery software has started use password “**restore**“ to proceed.
- The main menu of the recovery software is displayed (see figure Recovery software: Main menu).
- Choose **Create admin image**.
- Enter password for creating an admin image and press the button **Create**.
- After creation of the admin image the system returns to the main menu.

To restore a user defined hard disk image please follow the instructions in chapter Restoring the system.

When creating a new recovery media, a present admin image is automatically copied to the recovery media. When restoring the full hard disk from this recovery media, the admin image is copied back to the hard disk and is available from the recovery software’s main menu.

All rights reserved.

7.4 Creation of New Recovery Media

A new recovery media can be created at any time using the SCOTTY recovery software. This is useful, if the original recovery media is lost or an admin image was created and an updated recover media should be created.

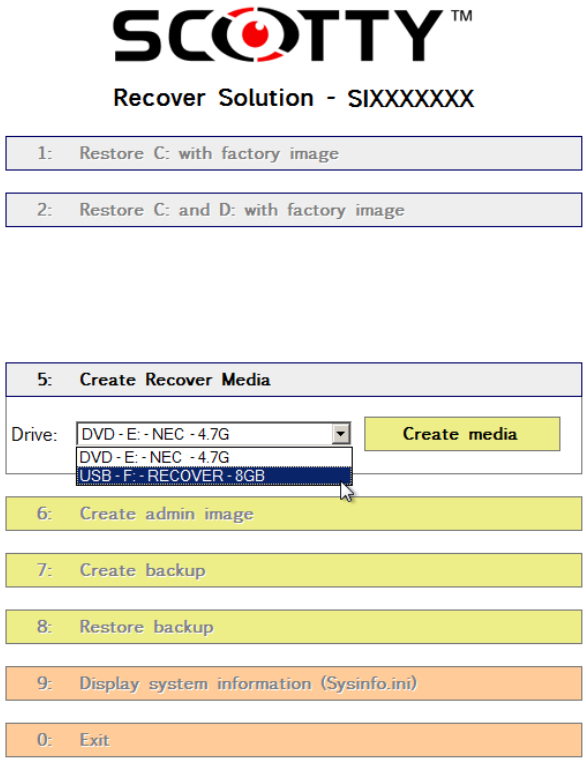
Creation of new recovery media:

- Reboot the computer.
- The boot manager screen is displayed for several seconds during the startup (see figure: Boot manager).
- Choose **Recover V3** using the **Arrow-down** Key and press **Return**.
- After recovery software has started use password "**restore**" to proceed.
- The main menu of the recovery software is displayed (see figure Recovery software: Main menu).
- If an USB recovery stick should be created, connect the stick to the system.

Warning: *When creating an USB recovery stick, the previous content of the stick will be deleted! The stick must have adequate memory capacity.*

- Choose **Create recover media** and select one of available USB media or the DVD drive.
- Press button **Create media**.
- Follow the instructions on the screen and insert further writeable DVD disks if asked for.

All rights reserved.


SCOTTY™
Recover Solution - SIXXXXXXX
1: Restore C: with factory image
2: Restore C: and D: with factory image
5: Create Recover Media
Drive:
DVD - E: - NEC - 4.7G
Create media
DVD - E: - NEC - 4.7G
USB - F: - RECOVER - 8GB
6: Create admin image
7: Create backup
8: Restore backup
9: Display system information (Sysinfo.ini)
0: Exit

Recovery software: Create Recover Media

7.5 Full System Backups

A “full system backup” contains the current state of the entire system including all data of the data partition. A system backup can be stored to an external memory device and can be restored at any time using the recovery software.

As system backups are stored with user defined file names, any number of different system backups are possible on a single external memory device. To create backups in regular intervals a USB hard disk with sufficient capacity is recommended.

Creation of full system backups:

- Reboot the computer.
- The boot manager screen is displayed for several seconds during the startup (see figure: Boot manager).
- Choose **Recover V3** using the **Arrow-down** Key and press **Return**.
- After recovery software has started use password “**restore**“ to proceed.
- The main menu of the recovery software is displayed (see figure Recovery software: Main menu).
- Choose **Create backup**.

All rights reserved.

- Choose the path to the external memory device to store the system backup by pressing the **Browse** button. A custom file name can be specified, if no file name is provided the systems serial number will be used.
- Press button **Create backup**.
- After creation of the system backup the system returns to the main menu.

When creating a „backup“, an image of the entire hard disk is created. Thus, a backup also contains the image of the delivery state as well as an optional user defined admin image.

Restoring a full system backup:

- Enter the main menu of the recovery software as described earlier.
- Choose item **Restore backup**.
- Select a stored system backup from an external memory device by pressing the **Browse** button. Only select system backups which have been created on this system!
- Press button **Restore backup**.
- After restoration of the system backup reboot the system.

To restore the system from a system backup, the system must have operational SCOTTY recovery software. In case of a hard disk failure or change, restore delivery state from a bootable recovery media first.

All rights reserved.

8 Maintenance

8.1 Maintenance

Under normal operation, the system requires no regular maintenance; only the internal battery needs a regular replacement.

8.2 Internal Battery Replacement

The system uses an internal battery for the real time clock. In event of loss of battery power, the unit will remain functional with the exception of the real time clock. This will result in a wrong date and time stamp on each created or modified file.

Battery replacement is recommended after 24 months.

Typically, the lifetime of the battery is 4 years. The 2 year battery replacement results from low temperature storage at -55°C. The replacement is a precautionary action to prevent a low battery failure.

For battery replacement, return the system to SCOTTY.

8.3 Fan filter pad replacement

The filter pad is located at the front side behind an air grid. The air grid can be removed without additional tools by opening the screws at the front to be able to change the filter pad.

Life cycle time of the filter pad may vary depending on the operating environment.

A replacement of the fan filter pad not later than 24 month is recommended.

A proper filter pad can be ordered at SCOTTY:

Filter pad: PSB 290S/P 300 35x100mm, part number: SD206960A

All rights reserved.

9 Appendix

9.1 Application Notes

Because SCOTTY network interfaces have been designed to be very universal, it is possible to connect the SCOTTY Video-Communication systems directly to many network configurations and support various applications.

Depending or your specific setup, the following pages may include detailed information for communication networks, specific applications, customized usage, and more.

All rights reserved.